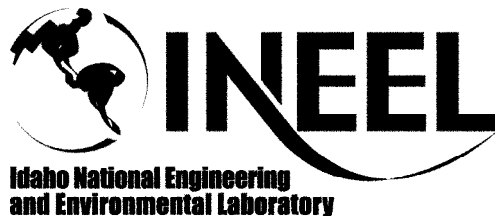


Plan

Waste Tracking Plan for the INEEL CERCLA Disposal Facility Complex

Prepared for:
U.S. Department of Energy
Idaho Operations Office
Idaho Falls, Idaho



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Environmental Restoration	Plan	For Additional Info: http://EDMS	Effective Date: 02/01/03

ABSTRACT

This plan describes how waste will be tracked at the INEEL CERCLA Disposal Facility (ICDF) Complex, which is scheduled to begin operation during the summer of 2003. Based on the existing and expected decisions, a large volume of Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) waste will be generated and require disposal. The ICDF Complex is the centralized Idaho National Engineering and Environmental Laboratory (INEEL) environmental restoration facility that will be responsible for the receipt, storage, treatment (as necessary), and disposal of INEEL CERCLA remediation waste. The ICDF Complex includes functions (facilities) for receiving, weighing, staging and storing, treating, repackaging, and disposing of waste soils and debris. The ICDF Complex will comprise the landfill, evaporation pond (two cells), leachate collection system, staging and storage areas, decontamination facility (including the treatment unit), administrative facility, and systems necessary for operations. This plan describes the process for tracking waste from the dig site to final disposal.

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ACRONYMS

CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
CP	Container Profile
COB	close of business
DOE-ID	Department of Energy Idaho Operations Office
GIS	geographical information system
ICDF	INEEL CERCLA Disposal Facility
INEEL	Idaho National Engineering and Environmental Laboratory
INTEC	Idaho Nuclear Technology and Engineering Center
IWTS	Integrated Waste Tracking System
LDR	land disposal restriction
MLLW	mixed low-level waste
OU	operable unit
OWTF	On-Site Waste Tracking Form
RCRA	Resource Conservation and Recovery Act
ROD	Record of Decision
SSA	Staging and Storage Annex
SSSTF	Staging, Storage, Sizing, and Treatment Facility
TSCA	Toxic Substances Control Act
UHC	underlying hazardous constituent
WAC	Waste Acceptance Criteria
WAG	waste area group

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1. INTRODUCTION

The Department of Energy Idaho Operations Office (DOE-ID) authorized a remedial design/remedial action for the Idaho Nuclear Technology and Engineering Center (INTEC) in accordance with the Waste Area Group (WAG) 3, Operable Unit (OU) 3-13 Record of Decision (ROD) (DOE-ID 1999). The OU 3-13 ROD requires the removal and on-Site disposal of some of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) remediation wastes generated within the boundaries of the Idaho National Engineering and Environmental Laboratory (INEEL). The INEEL CERCLA Disposal Facility (ICDF) Complex will be constructed to meet this requirement.

The ICDF Complex is an on-Site, engineered facility located south of INTEC and adjacent to the existing percolation ponds. Designed and authorized to accept not only WAG 3 wastes but also wastes from other INEEL CERCLA actions, the ICDF Complex will include the necessary subsystems and support facilities to provide a complete waste management system. The major components of the ICDF Complex will include

- The disposal cells (landfill)
- An evaporation pond, consisting of two cells
- The Staging, Storage, Sizing, and Treatment Facility (SSSTF).

The ICDF Complex, including a buffer zone, covers approximately 40 acres, with a landfill disposal capacity of approximately 510,000 yd³. The ICDF landfill meets the substantive requirements of Resource Conservation and Recovery Act (RCRA) Subtitle C (42 United States Code [USC] 6921 et seq.), Idaho Hazardous Waste Management Act, DOE O 435.1, and Toxic Substances Control Act (TSCA) (15 USC 2601 et seq.) polychlorinated biphenyl landfill design and construction requirements. The landfill is the consolidation point for CERCLA-generated wastes within the INEEL boundaries. The landfill will be able to receive CERCLA-generated wastes outside WAG 3 that meet the land disposal restriction (LDR) requirements (DOE-ID 2002a). Waste generated within the WAG 3 area of contamination that has not triggered disposal is not required to meet LDR criteria.

The evaporation pond, designated as a RCRA Corrective Action Management Unit in the OU 3-13 ROD, will be the disposal site for ICDF leachate and other aqueous wastes generated as a result of operating the ICDF Complex. In addition, other aqueous wastes, such as existing Group 4 and Group 5 purge water, may be disposed of in the evaporation pond in accordance with the ICDF Evaporation Pond Waste Acceptance Criteria (WAC) (DOE-ID 2002b).

The Staging and Storage Annex (SSA), located within the INTEC fenced area, serves as a temporary staging and storage area for INEEL CERCLA waste. The waste in the SSA will be designated for

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- Direct disposal to the ICDF landfill
- Direct disposal in the evaporation pond
- Staging, storage, or treatment in the SSSTF
- Packaging in preparation for off-Site disposal.

Wastes from WAG 3 and other CERCLA actions within the INEEL boundaries will be stored at the SSA during the design and construction of the ICDF Complex. Following construction, the operation of the SSA will be in accordance with the ICDF Complex Remedial Action Work Plan (DOE-ID 2003a). The ICDF Complex will accept low-level, mixed low-level, hazardous, and TSCA remediation wastes. Current projections of Site-wide CERCLA waste volumes total about 510,000 yd³. Most of the waste will be contaminated soil, but debris and CERCLA investigation-derived waste are also included in the waste inventory.

1.1 Purpose and Need

The INEEL Integrated Waste Tracking System (IWTS) will be used at the ICDF Complex to aid in the tracking of waste entering and leaving the facility to ensure complete, generation-to-disposition tracking of waste. IWTS also provides documentation of the waste that is disposed of at the facility, including source, characterization, hazardous and radioactive constituents, and disposal location. TFR-2540, “Modifications to Integrated Waste Tracking System to Support ICDF Complex,” delineates the functions IWTS provides to support operation of the ICDF.

Tracking of the waste destined for disposal at the ICDF Complex will begin at the Complex user’s dig site and end with disposal. Waste entering the ICDF Complex will be controlled on the basis of source, physical form, and concentration of hazardous constituents. A uniform and consistent waste acceptance process shall be implemented to include planning, waste certification, waste shipment, and waste receipt verification. The SSSTF will be the center for all waste handling and processing for the ICDF Complex. This facility provides centralized receiving, inspection, and treatment for incoming waste from various INEEL CERCLA remediation sites.

1.2 Requirements

The ICDF Complex’s waste tracking system addresses two specific applicable or relevant and appropriate requirements that were identified in the OU 3-13 ROD dealing with waste tracking (i.e., record keeping and surveying requirements, see Table 1).

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Table 1. IWTS compliance with applicable or relevant and appropriate requirements.

Regulation (40 CFR)	Compliance Demonstration
<p>§ 264.309 – The owner or operator of a landfill must maintain the following items in the operating record required under §264.73:</p> <p>(a) On a map, the exact location and dimensions, including depth, of each cell with respect to permanently surveyed benchmarks; and</p> <p>(b) The contents of each cell and the approximate location of each hazardous waste type within each cell.</p>	<p>IWTS, the INEEL Integrated Waste Tracking System, has the capability to generate an electronic map. Permanent benchmarks will be identified and used as reference points for this map. Locations for each cell will be maintained on this system.</p> <p>Using the XYZ coordinate system available in IWTS, each hazardous waste type received at the facility will be tracked to its final location within the landfill cells. Coordinate cell size will be addressed in the “ICDF Waste Placement Plan” (provided in the RDICWP for ICDF [EDF-ER-286]).</p>

2. INITIATION OF WASTE INTO THE ICDF COMPLEX

Before waste is accepted into the ICDF Complex, an IWTS Material Profile must be completed by the Complex user and provided to ICDF Complex management. In addition, the waste must be on the ICDF Complex schedule. The ICDF Complex waste tracking process is shown in Figure 1.

2.1 Waste Acceptance Scheduling Requirements

Upon identification of a waste as a potential candidate for entrance into the ICDF Complex for treatment, storage, or disposal, ICDF Complex users contact ICDF Complex personnel to begin the planning and scheduling process. All ICDF Complex users must provide project schedules to ICDF Complex management and operations for planning purposes. Failure to provide project schedules or to participate in routine planning discussions may result in delays to the acceptance process.

Operational schedules shall include anticipated waste to be shipped based on a rolling 6-week projection. Schedules will be available to applicable parties (e.g., ICDF Complex management, operations team, generating WAGs, regulatory Agencies, etc.) throughout the duration of the project.

Required scheduling information includes, at a minimum, the waste volume, general class of waste (described in Section 2.2 of the ICDF Complex WAC [DOE-ID 2002c]), primary waste forms, potential radioactive and hazardous constituents, applicable listed waste codes, expected waste disposition pathway, and special handling requirements, including any anticipated need for treatment at the SSSTF.

Table 2 lists the major planning steps and corresponding timeframes that ICDF Complex users must complete to send waste to the ICDF Complex.

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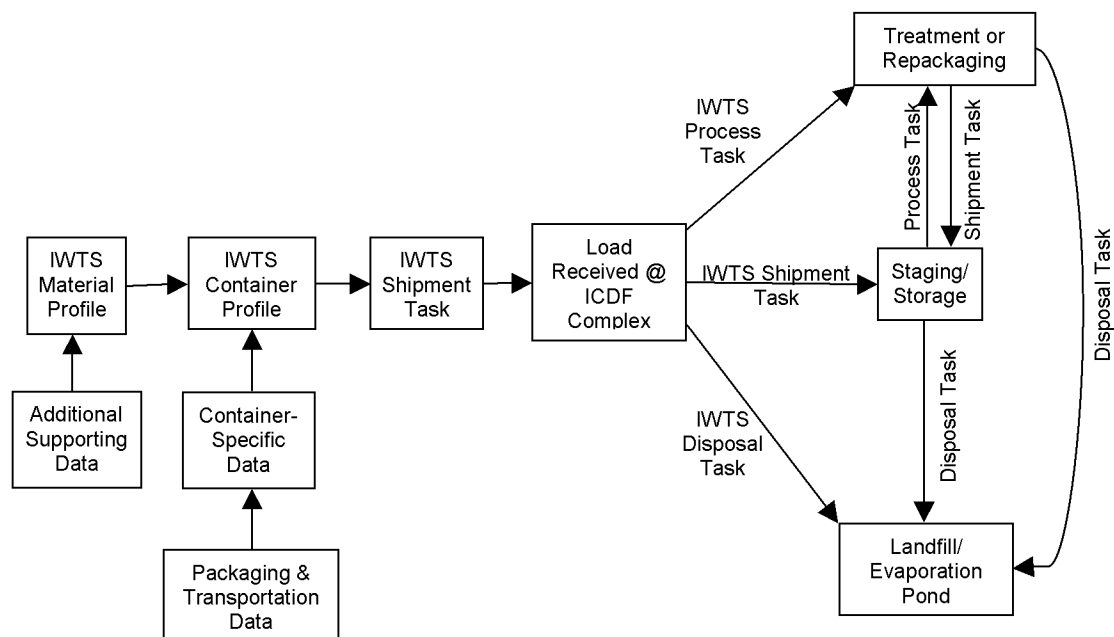


Figure 1. ICDF Complex waste tracking process.

Table 2. Schedule for CERCLA project and ICDF Complex interaction.

Information	Date Information Due to ICDF Complex Management from ICDF Complex User
Project name, proposed schedule, and waste type	6 months before anticipated ship date
Material Profile entered into IWTS	3 months before anticipated ship date
Shipping schedule (number of trucks/containers per day) and days of shipment	1 month before first ship date

2.2 Waste Characterization

Characterization of all waste submitted for acceptance into the ICDF Complex is the responsibility of the ICDF Complex user and must be completed before the IWTS Material Profile is submitted. The user may use either acceptable knowledge or sampling and analysis to characterize the waste. Acceptable knowledge/process knowledge and the appropriate use thereof is described in *ICDF Complex Waste Acceptance Criteria*, Section 2.4, “Physical and Chemical Characterization,” and Section 2.5, “Radiological Characterization” (DOE-ID 2002c).

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3. WASTE ACCEPTANCE INTO THE ICDF COMPLEX

Before waste can be shipped to the ICDF Complex, an IWTS Material and Waste Characterization Profile (Material Profile) and corresponding Container Profiles must be completed. The Profiles are described below.

3.1 IWTS Material and Waste Characterization Profile (Material Profile)

The ICDF Complex user completes an IWTS Material Profile for the waste stream. A Material Profile (see example in Appendix B) is required to be entered into IWTS a minimum of 3 months before the anticipated shipping date for each waste stream entering the ICDF Complex. The Material Profile is completed using the information obtained during the waste characterization process, and any other supporting information deemed necessary. The Material Profile describes the chemical, radiological, and physical characteristics for the waste stream, which are generally entered as maximum/minimum ranges to encompass all containers in the waste stream. IWTS automatically assigns the Material Profile a unique identification number beginning the process of electronically tracking the waste.

When the Material Profile is complete, the user electronically certifies the profile and notifies ICDF Complex personnel. Along with the Material Profile, the ICDF Complex user is required to submit applicable supporting documentation, such as the hazardous waste determination, LDR determination, analytical results, paint filter test results, radiological and chemical screening results, special analytical processes identified for a specific waste type, and the necessity for debris treatment.

Once the Material Profile is certified, the ICDF Complex operations manager (or designee) reviews the Material Profile and electronically accepts or rejects the waste stream. As part of the Material Profile acceptance, ICDF Complex personnel will approve the destination of the waste within the ICDF Complex. Acceptance will be complete when the ICDF operations manager (or designee) electronically “checks” the approval section of the Material Profile. After ICDF Complex management approves the Material Profile, the ICDF Complex user has approval to send the waste stream to the ICDF Complex, provided the waste is within the WAC limits. Verification sampling of the waste stream to verify that it is within the parameters of the approved Material Profile is done before the waste is shipped to the ICDF Complex, and is described in the *ICDF Complex Waste Verification Sampling and Analysis Plan* (DOE-ID 2003b).

If ICDF Complex personnel review the Material Profile and find conflicts between the profile and the hazardous waste determination or verification sampling results, ICDF Complex personnel will work with the ICDF Complex user to resolve the discrepancy. If the waste is determined unacceptable for disposal at the ICDF Complex, storage may be an option.

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After the waste is scheduled for shipment, it is the responsibility of the ICDF Complex user to notify the ICDF Complex management of any delay or deviations from the Material Profile that may occur. This may require the Material Profile to be amended and a new shipping date to be established. The ICDF Complex user corrects the Material and Container Profiles to address deficiencies. The ICDF Complex operations manager reviews changes to the profiles and either accepts or rejects the changes.

The ICDF Complex operations manager will reevaluate a Material Profile if the process generating the waste has changed, if visual inspection or verification sampling/analysis indicates that the waste does not match the Material Profile, or if the waste is not in compliance with the ICDF Complex WAC (DOE-ID 2002c). When a Material Profile is reevaluated, the operations manager may request the ICDF Complex user to verify that the current Material Profile is accurate, supply a new Material Profile, investigate alternative disposal, and/or submit additional samples for parameter analysis.

It should be noted that the ICDF Complex personnel will need access to the waste in order collect the required verification samples. Prior to shipment of waste, the generator will be notified of the verification requirements, and arrangements will be made to collect the verification sampling.

3.2 IWTS Container Profile

The ICDF Complex user completes a Container Profile for each container of waste intended to be shipped to the ICDF Complex. An IWTS Container Profile (shown in Appendix C) is used to track containers of waste belonging to the waste stream identified by the Material Profile. A container in IWTS is defined as a parcel of waste with a defined volume and/or weight, such as a box, roll-off box, dump truck, or drum. The Container Profile identifies the chemical, radiological, and physical characteristics for that particular container. These characteristics are entered as specific values and are encompassed by the maximum/minimum ranges of the associated Material Profile. Supporting information specific to the individual containers, such as special handling instructions, identification of a nonstandard waste container, and documentation of physical verification is also provided in the Container Profile.

The Container Profile is generated from the Material Profile. IWTS automatically ties the container to the waste stream using the Material Profile's identification number. In addition, a unique barcode number is assigned to each container, and is used as the identifier when the Container Profile is entered into IWTS. This barcode number electronically tracks the actual container and Container Profile in IWTS. Upon completion of the profile, the ICDF Complex user certifies the information is complete and accurate. The Container Profile is then electronically available for ICDF Complex personnel review and approval. Approval of the Container Profile constitutes approval to ship the waste to the ICDF Complex.

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After both the Material and Container Profiles are approved, the waste will be assigned a shipping date to the ICDF Complex.

4. WASTE PACKAGING AND SHIPMENT

The ICDF Complex user is required to prearrange the delivery time and date of all waste shipped to the ICDF Complex, and ensures that an On-Site Waste Tracking Form (OWTF) accompanies the shipment to the ICDF Complex. A shipment sent without prior arrangement will be rejected.

4.1 Waste Packaging

The ICDF Complex user is responsible for correctly packaging, marking, and labeling waste for acceptance into the ICDF Complex, including any applicable Department of Transportation requirements. The unique barcode number assigned to the container when the Container Profile was completed is applied at the time of packaging. The ICDF Complex WAC (DOE-ID 2002c) contains ICDF-Complex-specific container selection and packaging requirements.

The ICDF Complex user (with ICDF oversight and acceptance) will check the shipment at the remediation site to ensure that the waste containers are packaged, marked, and labeled to meet the requirements of the three sets of ICDF WAC (DOE-ID 2002a, 2002b, 2002c) and Department of Transportation requirements, if applicable. All of the waste packaged for shipment to the ICDF Complex will be inspected during the remediation excavation and/or loading process to ensure (1) that the waste matches the submitted Material and Container Profiles, (2) that the waste does not contain prohibited material (e.g., free liquids), (3) that void space requirements are met (if applicable), and (4) that containers are compatible with waste contents. This check ensures that waste received at the ICDF Complex will not be rejected because of incorrect packaging at the generation site.

4.2 Waste Shipment

Prior to shipping, the ICDF Complex user completes a Shipment Task (see example in Appendix D) in IWTS for the waste shipment. The container barcode numbers, shipping date, originating facility and receiving unit, and other container-specific and shipment-specific information are entered onto the Shipment Task. After all appropriate approvals are obtained, the Shipment Task is electronically available for ICDF Complex personnel approval.

Before the shipment leaves the generating facility, individual OWTFs (see Figure 2) are printed for each container on the Shipment Task. The OWTF ensures the waste acceptance process can continue in the unlikely event that IWTS is unavailable. Data from OWTFs will be added to IWTS as soon as possible but not to exceed close of business (COB) the next working day. OWTFs are maintained at the ICDF in the event emergency response activities require information regarding waste, constituents, and amounts placed during any given day.

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Contact: James Bruce (208)526-4370
Generator: Waste Area Group 5 - PBF/ARA (WAG 5)

SSA/WAG5
SSA/WAG5

Transporter: _____ Ship Date: _____

I certify that to the best of my knowledge, the information entered in this and any attached documentation is complete and accurate.

Signature _____

Date _____

Container List - Total Containers: 1

WAG010088

WAG010088

NRC Class		Uranium Content	Disposal Coordinates			Name	
<input type="checkbox"/> A	<input type="checkbox"/> Unirradiated	Latitude:	Longitude:	Altitude:			
<input type="checkbox"/> B	<input type="checkbox"/> Depleted						
<input type="checkbox"/> C							

Physical Data

Total Volume:	14.9 M3	Total Weight:	49700 LBS	Waste is LDR Compliant
Net Volume:	14.9 M3	Tare Weight:		Less than 20'
		Net Weight:		Debris

General Container Info: CW Non-Standard

Parent Material Profile: 2855N.R2 WAG 5: Grouted Piping, 10' max depth, 6' or less diameter
729 at site ARA-2

Proper Shipping Name:
Radioactive material, LSA, s., 7, UN2912, Am-241, 9 F, 0 F, 8 U, C, solid oxide 1.1E-03 TBq

Originating Unit: WAG 5 General Unit

Concentration	Material Name
2.3 wt%	Unlabeled
97.7 wt%	Unlabeled

Chemical Data

Waste Codes:
F001 F005

Radiological Data

Nuclide	Amount
Ag-108m	1.19E-05 Ci
Am-241	8.43E-05 Ci
Co-60	3.33E-04 Ci
Cs-134	2.53E-05 Ci
Cs-137	2.69E-02 Ci
Eu-152	4.65E-05 Ci
Eu-154	1.14E-05 Ci
Pu-238	5.83E-05 Ci
Pu-239	5.94E-05 Ci
Pu-240	5.94E-05 Ci
Sr-90	1.33E-03 Ci
U-234	9.16E-05 Ci
U-235	5.61E-07 Ci
U-238	1.20E-06 Ci
Y-90	1.33E-03 Ci
Zn-65	3.97E-07 Ci

Total Curies: 3.03E-02

Rad at Contact: = 80 mrem

Rad at 1 Meter: = 10 mrem

Total Fissile: 2.61E-01 g

Figure 2. Example of an On-Site Waste Tracking Form.

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The ICDF Complex user performs the “execute send” portion of the Shipment Task. The “execute send” portion of a shipment task provides the Complex user a final opportunity to check the shipment against the current ICDF inventory and WAC limits. The constituents and concentrations are “virtually” added to the existing ICDF inventory, the sum is compared to WAC limits, and the shipment either passes or fails. This virtual check gives the Complex user reasonable assurance the shipment will not exceed WAC limits.

The OWTF must accompany the load and be verified at the ICDF Complex gate. The Material and Container Profiles must be approved before the load arrives at the gate.

5. WASTE RECEIPT

When waste is received at the ICDF Complex, the shipment and corresponding paperwork will be checked before acceptance. This process is described below.

5.1 ICDF Receipt Inspection

When the shipment arrives at the ICDF Complex, the electronic documentation (e.g., IWTS Material Profile, Container Profiles, Shipment Task) and paperwork (e.g., OWTF, Uniform Hazardous Waste Manifest, Bill of Lading, etc.) accompanying each shipment of waste will be reviewed. Receipt inspection will be performed on all incoming shipments through a combination of visual inspection and cross-check against the IWTS Shipment Task, OWTF, and Material and Container Profiles. As a minimum, the waste shipment will be checked against accompanying documentation for the correct Material Profile number, correct Container Profile numbers, proper number of containers, correct container weights/volumes, adequacy of shipping documentation, and appropriate marking and labeling of containers. Additional checks will be done on a random basis as determined by the ICDF quality assurance officer. Detailed information on the ICDF waste receipt program is provided in Section 4.3.1, “Waste Receiving and Inspection,” of the Operations and Maintenance Plan (DOE-ID 2003c).

5.2 Receiving

After the shipment has been receipt-inspected, the waste is accepted into the ICDF Complex, the vehicle is weighed, and the weight is recorded on the OWTF. ICDF Complex personnel sign the OWTF as “shipment accepted,” and electronically accept the waste by completing the “shipment received” portion of the IWTS Shipment Task. Every effort will be made to complete the “shipment received” portion of the task following the physical receipt inspection. However, if circumstances do not allow completing the “shipment received” portion of the task at this time, it will be completed by COB the next operating day. In addition,

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data (e.g., weight, disposal grid) from the OWTF will be entered into IWTS as soon as possible, not to exceed COB the next operating day. OWTFs are maintained at the ICDF Complex should emergency response activities require information regarding waste, constituents, and amounts placed during any given day.

6. WASTE DESIGNATION

Once the waste is accepted, various IWTS tasks are completed to electronically transfer and track the waste, depending on whether the waste will be stored, staged, treated, repackaged, or direct disposed. An IWTS Shipment Task is used to transfer the waste to a staging or storage area. A Disposal Task is used to transfer waste to the landfill or evaporation pond for disposal, and a Process Task is used transfer waste from an original container into a receiving/destination container in the case of treatment in the treatment unit or repackaging. More information on how the tasks are used for waste tracking is provided below and in Appendix A of this Plan. An example of a Shipment Task is provided in Appendix D.

6.1 Waste Staging and Storage

Waste arriving at the ICDF Complex may be managed differently for a variety of reasons, such as while awaiting treatment, pending identification of treatment capacity, or awaiting disposal. A brief description of the storage and staging areas is provided below. Detailed information on how these storage areas are operated is provided in Section 5 of the Operations and Maintenance Plan (DOE-ID 2003c).

6.1.1 Waste Storage

The SSA is currently storing CERCLA waste awaiting treatment or disposal at the ICDF Complex. Once the Complex becomes operational, a portion of the SSA will be operated as a 40 Code of Federal Regulations (CFR) 262.34 unit providing storage for incoming and ICDF-Complex-generated liquid waste awaiting disposal at the evaporation pond. Another portion of the SSA will be operated as a 40 CFR 264.554 unit providing staging for incoming solid waste (e.g., soil, debris) awaiting treatment and subsequent disposal in the landfill as described in Section 6.1.2. Another waste storage area, the tank and container storage area, is located within the ICDF Complex fence. An IWTS Shipment Task will be used to electronically move the waste from receiving into the appropriate storage unit within the SSA or ICDF Complex. ICDF Complex personnel complete, approve, send, and receive the Shipment Task. When the Shipment Task is executed, logic checks compare the shipment to established inventory limits ensuring the shipment does not exceed any limits.

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Upon physical receipt of the shipment at the SSA or ICDF Complex storage area, a location is assigned for each container and the precise location noted on the OWTF. Every effort will be made to complete the shipment task immediately following actual receipt. However, if circumstances do not allow completing the shipment task at this time, it will be completed by COB the next operating day.

6.1.2 Waste Staging

The ICDF Complex contains several waste staging areas. The staging areas will perform different functions, as described in Section 5 of the Operations and Maintenance Plan (DOE-ID 2003c).

An IWTS Shipment Task will be used to electronically move the waste from receiving into the staging areas. The process is the same as described above in Section 6.1.1, except the receiving location will be a staging area. Every effort will be made to complete the shipment task immediately following actual receipt. However, if circumstances do not allow completing the shipment task at this time, it will be completed by COB the next operating day.

6.2 Waste Disposal

Waste may be taken directly to the landfill or evaporation pond from:

(a) receiving, (b) after being stored, staged, or (c) after being treated. An IWTS Disposal Task is used to track waste being disposed of at the ICDF Complex.

6.2.1 Landfill

If the waste meets the ICDF Landfill WAC (DOE-ID 2002a), the waste may be taken from the receiving area directly to the ICDF landfill for disposal. The OWTF accompanies the waste and is signed off when waste is disposed of. ICDF Complex personnel create and execute the Disposal Task. Logic checks, built into the task, add the waste constituents and quantities (e.g., curies, grams) to the current landfill inventory. The sum is compared to established WAC limits and the task either passes or fails. Disposal of waste that has first been stored, staged, or treated at the ICDF Complex follows this same process. The only difference is that the originating facility for the Disposal Task will be the ICDF storage, staging, or treatment unit. Every effort will be made to enter data from the OWTF and complete the disposal task following actual placement of the waste. However, if circumstances do not allow, data will be entered and the disposal task completed by COB the next operating day. OWTFs are maintained at the ICDF Complex should emergency response activities require information regarding waste, constituents and amounts placed during any given day.

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6.2.2 Coordinates

The ICDF landfill will be modeled into three-dimensional grid coordinates in IWTS to correspond to the physical X/Y/Z axis. The specific grid where the waste was placed is noted on the OWTF and entered into IWTS. Each Disposal Task in IWTS identifies the disposal grid coordinates for each container or load deposited, which is updated when the task is executed, ensuring the documentation of the precise location of the waste within the landfill. Sufficient grid coordinates have been created to accommodate the physical reality (e.g., spreading by the bulldozer) that a container's contents may be distributed across as many as four (4) grids.

6.2.3 Evaporation Pond

WAG 3 aqueous waste that meets the evaporation pond WAC (DOE-ID 2002b) may be sent directly to the pond for disposal, or stored or treated first. An IWTS Disposal Task is used to electronically move the waste from receiving, storage/staging, treatment, or disposal in the evaporation pond. The process is the same as described in Section 6.2.1 above except the receiving location will be the evaporation pond instead of the landfill. The cell where the waste is placed is noted on the OWTF for entry into IWTS, similar to the landfill grids.

6.2.4 Waste Processing

Upon receipt, waste may be sent for processing at the ICDF Complex. Processing options at the Complex include either treatment at the treatment unit or repackaging at the decon building.

6.2.5 Treatment

If the waste does not meet the ICDF landfill WAC or the evaporation pond WAC (DOE-ID 2002a, 2002b), then the waste may be sent to the treatment unit, provided the waste meets the specific treatment unit criteria (e.g., < 6 in. in diameter, < 500 mr/hr at contact radiation reading). Contaminated soil and hazardous debris have been identified as candidates for treatment. On occasion, aqueous liquids and/or sludge will be used to augment the treatment recipe in place of noncontaminated ingredients (e.g., water).

An IWTS Process Task is used to electronically transfer waste (e.g., constituents and associated quantities) and any regulatory designations (e.g., EPA codes, underlying hazardous constituents [UHCs]) from an original container into a receiving/destination

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container. ICDF Complex personnel create and execute the Process Task. Based upon defined parameters (weight, percent, etc.) the system removes constituents and associated quantities from an original container and partitions them into a receiving/destination container. In addition, the system transfers the original EPA codes/constituents and any UHCs to the receiving/destination container. This ensures original EPA codes and UHCs are not inadvertently omitted. As with all other tasks, when the Process Task is completed, the “incoming waste” is checked against any established inventory or treatment unit limits to ensure none are exceeded. Every effort will be made to complete the process task following actual treatment. However, if circumstances do not allow completing the process task at this time, it will be completed by COB the next operating day.

When treatment of the waste is completed, a Shipment Task is used if the containers are to be placed into a storage or staging area, and a Disposal Task is used if the waste will be sent to the landfill or evaporation pond for disposal.

6.2.6 Repackaging

Waste being shipped to an off-Site treatment, storage, or disposal area may require repackaging into containers that meet Department of Transportation packaging requirements, or to meet the off-Site WAC. Waste may be removed from the parent container and placed in an appropriate new container, or the original container may be overpacked into a new container. This work will be conducted in the decon building and may be performed in either the treatment area or decontamination bay. An IWTS Process Task is used to track waste being repackaged.

7. INVENTORY TRACKING AND COMPLIANCE LIMITS

Inventory histories and compliance limits will be tracked and reported by IWTS. See the sections below for more detail. In addition, TFR-2540, “Modifications to Integrated Waste Tracking System to Support ICDF Complex,” delineates the compliance limits and reports developed to support ICDF operation.

7.1 Inventory Tracking

Inventory histories for all ICDF storage locations based on container movement (date versus location) will be used to provide real-time data on the current inventory and ensure compliance with inventory limits and the ICDF Complex WAC (DOE-ID 2002c). Hand-held inventory tools may be used to perform periodic inventory checks of the treatment, storage, and staging areas. Using the hand-held tools, IWTS-reported inventory can be checked against the actual

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physical inventory of a location. ICDF Complex personnel document these inventory checks in IWTS, which also provides for documentation of any inventory discrepancies and resolutions to the discrepancies.

Since inventory is location-specific and relies on container movement (e.g., shipment tasks, disposal tasks), both the current and past inventories for a location can be tracked and reported. Location-specific inventories are maintained by physical properties (e.g., individual container ID #, total container count, total volume and weight), radiological properties (e.g., fissile material, individual radionuclides and activities), and chemical properties (e.g., constituents and amounts). Accurate inventory tracking relies on the timely creation and completion of transactions (e.g., Shipment and Disposal Tasks). Every effort will be made to complete transactions as soon as physical movement occurs. In the event circumstances do not allow completion of transactions immediately following physical movement, they will be completed no later than COB the next operating day.

Analytical data from sampling of landfill leachate will be used to populate IWTS leachate Container Profiles (CPs). These CPs representing discreet volumes (e.g., 5,000 gal) with constituents and activities/masses (2.7E-6 Ci of I-129, 15.4 g of Hg, etc.) will be transacted (e.g., shipment task) from the landfill to the evaporation ponds on a routine basis. The evaporation pond constituent inventory will increment accordingly upon completion of each transaction. When circumstances warrant, leachate analytical data will be used as the basis for adjusting the landfill constituent activity/mass.

Following completion of a generating WAG's remediation activities, ICDF Complex personnel will review analytical data derived from the waste characterization process and analytical data from ICDF verification sampling for principal constituents (I-129, Pu-238, mercury, arsenic, etc.). Providing (1) data were derived from comparable analytical methods, (2) sampling and subsequent analysis ensures data accuracy and comparability, and (3) equivalent data validation protocol (e.g., level-A, level-B) was employed, the ICDF may elect to adjust the landfill inventory using the constituent/data mean at the 80% confidence level. If review of the data does not indicate these conditions are met, the values used to originally populate the IWTS Material/Container Profiles will stand.

7.2 Compliance Limits

Numerous compliance checks (physical, radiological, chemical and other operational, etc.) have been built into the IWTS system. "Physical Inventory" checks include gross and net weight, gross and net volume, and container count. "Radiological Inventory" checks include fissile material, reportable quantities, less than DOE category III, and user-defined nuclides. "Chemical and Other

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Inventory” checks include threshold quantities, threshold planning quantities, reportable quantities, flammable material, and user defined materials. “Operational Inventory” checks include LDRs, IDAPA, NESHAP, SLERA, groundwater contaminants of concern, and transuranic radionuclide concentration. Using limits defined and enabled at the facility (e.g., ICDF Complex), unit (SSSTF receiving, SSSTF treatment, landfill, evaporation pond, etc.), and Grid-X (Landfill Grid A5L-1, etc.) designations, IWTS checks transactions (e.g., shipment tasks, disposal tasks, process tasks) for limit compliance. Constituents (e.g., radiological, chemical) and amounts (e.g., curies, grams) associated with a transaction are added to the existing inventory and compared to established limits. These limits may be daily, annual, or total depending on the media that is being considered. If the sum of the current inventory and transaction are less than the established limit, the transaction passes. If the sum of the current inventory and transaction are greater than the established limit, the transaction fails or a warning is provided depending on the limit definition. Limit compliance reports have been prepared for each of the limits identified above and are available for the various locations at the ICDF Complex. Limit evaluations are electronically stored for each task for historical reference and provide objective evidence demonstrating limit compliance.

7.3 Reporting

IWTS contains many standardized reports accessed directly in the software. These reports typically deal with day-to-day operations information such as inventories, limit compliance, and process and disposal activities for specified locations. Other reports, such as regulatory-driven or management-level reports, are obtained through Microsoft Access or web-based applications. Section 9.2.2, “Nongroundwater Monitoring Data Submittals and Notifications,” of the Operations and Maintenance Manual (DOE-ID 2003c), describes required reports for the ICDF Complex that may be supported by IWTS data.

8. IN-TRANSIT RESOLUTION ACTIONS

This section covers corrective action once the waste has arrived at the ICDF Complex; actions taken before waste is received into the Complex are described in Sections 2 and 3 of this plan.

Noncompliant waste received at the ICDF Complex will require appropriate resolution before waste acceptance. Resolution alternatives may include, but are not limited to, correction of the noncompliant condition at the ICDF Complex, conditional acceptance of the waste at the ICDF Complex, staging at an appropriate location until resolution of the issue, or returning waste to the generating WAG. A waste specialist will be contacted prior to returning waste to the generating WAG to ensure all regulatory issues are appropriately considered.

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If, upon receipt inspection of the shipment, the documentation is incomplete or incorrect, the waste will be moved to the truck holding area inside the ICDF Complex fence pending resolution. The waste may be held in this area no longer than 10 working days before being sent to an appropriate staging or storage unit or returned to the generating WAG. ICDF Complex management will work with the ICDF Complex user to resolve the issue(s) in a timely manner. Resolution may include contacting the ICDF Complex user to correct discrepancies on the Material Profile, obtaining more information, correcting mislabeling, etc.

In addition to immediate resolution of the noncompliant conditions, further steps will be taken to determine the underlying cause of the problem and implement corrective actions as necessary to prevent recurrence. Reoccurrence of noncompliant shipments from an ICDF Complex user may result in rejection of the Material Profile and termination of shipments until the issues have been resolved.

9. RECORDS MANAGEMENT

All records will be kept on file at the ICDF Complex as outlined in the Federal Facility Agreement and Consent Order (DOE-ID 1991). The records and documents that will be kept and maintained include IWTS Waste and Container Profiles and supporting documentation, map/cell locations of wastes, shipping documentation, inspection records, tank records, and asbestos-TSCA waste records. Detailed information on the ICDF Complex records management system, including a complete list of documents to be kept, is provided in Section 10 of the Operations and Maintenance Plan (DOE-ID 2003c).

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11. APPENDIXES

Appendix A, Integrated Waste Tracking System Description

Appendix B, IWTS Material Profile Example

Appendix C, IWTS Container Profile Example

Appendix D, IWTS Shipment Task Example

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Appendix A

Integrated Waste Tracking System Description

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Integrated Waste Tracking System Description

The ICDF Complex will use the INEEL IWTS to aid in the tracking of waste entering and leaving the facility. IWTS is used across the INEEL to track hazardous, low-level, and mixed low-level waste, and provides features that aid in complying with requirements unique to the DOE complex. The system is a replicated client-server application distributed on several servers across the INEEL, which provides flexibility when deploying the system across a large, geographically-diverse area using various qualities of network service.

A-1. SYSTEM DESCRIPTION

A-1.1 Background

IWTS is an INEEL-developed software that has been used to track hazardous and mixed low-level waste since 1995. In June 1997, the INEEL began using IWTS to also track low-level waste. The system has been continuously upgraded and modified to reflect changing environmental and waste management business practices and to help implement new regulatory and DOE requirements.

A-1.2 System Functions

A-1.2.1 Characterization and Tracking

IWTS is a functional database used to track containerized waste from generation to final disposition. IWTS provides detailed characterization information (chemical, physical, radiological) of waste streams and individual containers. IWTS tracks container relocations, shipments, disposal, and processing/treatment activities, and provides a genealogical history of processed/treated containers. A Uniform Hazardous Waste Manifest or other required shipping document can be generated from IWTS for shipments requiring such documentation.

A-1.2.2 Inventory Control and Regulatory Compliance

Facility inventory history, based on container movement, is maintained to provide present and historical waste inventory configuration. IWTS evaluates waste inventories against limits established by regulatory drivers such as RCRA, DOE orders, facility permits, and safety analysis documents, and provides the objective evidence of present and historical compliance. IWTS can be modeled and limit and operational parameters defined to meet the diverse operational needs of waste treatment, storage, and disposal facilities.

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Page: A3 of A12**A-1.2.3 System Security and Quality Control**

IWTS security protocol controls user access to prohibit tampering and prevent accidental data changes. User groups (read only, WGS, traffic, ICDF operations, etc.) are created. Facility (e.g., ICDF Complex) and unit (e.g., SSSTF Receiving, Landfill) authorizations are granted, action (e.g., mixed low-level waste [MLLW] CERCLA generated to be disposed at the ICDF Complex) authorizations are granted, and users are assigned to appropriate groups. If further access control specificity is necessary, granular data element access control is refined at the group and individual user level. User identification and dates are logged during system access, data entries, and data changes to provide accountability. Electronic validation checks enabled at each Waste Type Action (e.g., MLLW CERCLA generated to be disposed at the ICDF Complex) are provided to help ensure complete and quality data entry. IWTS provides configuration control for data changes to quality records.

A-1.2.4 Reporting

IWTS provides the data source for regulatory, management, and waste operations reporting needs. Operations-related reports such as facility inventories, limit compliance evaluations, and container history can be obtained in the IWTS application. Most regulatory reports are compiled from data retrieved from IWTS and then generated in a separate application, such as Microsoft Access, to allow ease of data validation and verification. IWTS data also can be retrieved to compile web-based reporting activities.

A-1.2.5 System Support

A user manual is provided to support the use of IWTS. The manual covers the basics of system navigation, data entry, and execution of Shipment, Process, and Disposal Tasks. A support team is also available to assist with more complex issues and to support special projects that may have needs outside the boundaries of normal IWTS functions.

A-2. WASTE CHARACTERIZATION**A-2.1 Waste Stream****A-2.1.1 Data Input**

IWTS houses waste stream characterization information as entered by a system user. The system provides for data entry of chemical, radiological, and physical characteristics and is entered into a Material

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Profile. At the waste stream level, these characteristics are typically entered as maximum/minimum value ranges to encompass all containers associated with the waste stream.

IWTS also provides for data entry of supporting information that may be useful in determining a disposition path or compliance to established WAC. Supporting information may include descriptions of waste generating processes, analytical methods used, approved deviations from established WAC, and generation volume estimates.

Once waste stream characterization data are entered into IWTS, the data can be accessed at any time. These data can be either viewed via the IWTS client or printed out in hard copy. Updates and changes to data are replicated to all IWTS servers within an hour to ensure IWTS users at all site locations have access to the most current data. Changes to approved Material Profiles are captured and document the original data value, the new data value, identification of the user making the change, and the date and time of the change.

A-2.1.2 Waste Stream Approval

IWTS uses a three-step approval paradigm for documenting the disposition approval of waste streams. The steps incorporate data certification, data review, and disposition approval, as defined below, based on characterization data versus WAC.

- **Data Certification:** Certification is the act of declaring that the characterization data provided in a Material Profile are complete and accurate. The two basic methods of obtaining characterization data are sampling and analysis activities and process knowledge. “Complete data” implies that all waste data required by the ICDF WAC and established regulations have been included in the profile. “Accurate data” implies that all waste data included in the profile match that of the source data documents.
- **Data Review:** A review of a Material Profile is an independent examination to identify possible data errors or missing required data. The review will include a check of the profile data against the source data documents. The review will also ensure that sufficient data have been provided to justify an approval or disapproval for the waste to be offered for disposition based on the ICDF WAC.

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- **Disposition Approval:** The approval of a Material Profile is the official consent for the waste defined by the profile to be offered for disposition. The waste being offered for disposition must meet the ICDF WAC.

During the Material Profile approval process, IWTS provides electronic validation checks based on waste types (i.e., hazardous, low-level, MLLW). These checks help the approver ensure complete data entry and determine whether the profile is within the bounds of the value ranges documented in the associated Waste Approval Form. A security scheme can be established in IWTS so that only a user with ICDF rights (such as the facility manager or designee) can electronically approve a Material Profile for wastes destined for the ICDF Complex.

A-2.2 Container

A-2.2.1 Data Input

IWTS houses individual container characterization information as entered by a system user. IWTS defines a container as most any parcel of waste with a defined volume and weight such as a drum, box, or dump truck. The system provides for data entry of chemical, radiological, and physical characteristics and is entered into a Container Profile. At the container level, these characteristics are entered as specific values that are encompassed by the maximum/minimum ranges of the associated Material Profile.

IWTS also provides for data entry of supporting information specific to the individual container. Supporting information may include special handling instructions, identification of a nonstandard waste container, and documentation of a physical verification of container contents.

Once container characterization data are entered into IWTS, the data can be accessed at any time. These data can be either viewed via the IWTS client or printed out in hard copy. Updates and changes to data are replicated to all IWTS servers within an hour to ensure IWTS users at all site locations have access to the most current data. Changes to approved Container Profiles are captured and document the original data value, the new data value, identification of the user making the change, and the date and time of the change.

A-2.2.2 Container Approval

IWTS uses a three-step approval paradigm for documenting the disposition approval for waste containers. The steps incorporate data

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certification, data review, and disposition approval, as defined below, based on characterization data versus the associated Material Profile.

- **Data Certification:** Certification is the act of declaring that the characterization data provided in a Container Profile are complete and accurate. The two basic methods of obtaining characterization data are sampling and analysis activities and process knowledge. “Complete data” implies that all container data required by the parent Material Profile, the ICDF waste characterization, and established regulations have been included in the profile. “Accurate data” implies that all container data included in the profile match that of the source data documents.
- **Data Review:** A review of a Container Profile is an independent examination to identify possible data errors or missing required data. The review will include a check of the profile data against the source data documents. The review will also ensure that the Container Profile data are within the bounds of the parent Material Profile.
- **Disposition Approval:** The approval of a Container Profile is the official consent for disposition of the container defined by the profile. For container disposition approval to be granted, the container must be within the bounds of the parent Material Profile and the parent Material Profile must be approved. The ICDF facility manager or designee will grant approval.

During the Container Profile approval process, IWTS provides electronic validation checks based on waste types (i.e., hazardous, low-level, MLLW). These checks help the approver ensure complete data entry and determine whether the profile is within the bounds of the value ranges documented in the associated Material Profile.

A-3. WASTE TRACKING

IWTS tracks each waste container by maintaining a logic record of every movement, process, or disposal action performed on an individual container. These actions or tasks are time-based and location-based, thus providing a chronological history for each container. Time and location “logic checks” are built into IWTS to help ensure a documented task for a container reflects the physical action (i.e., a container in IWTS cannot be electronically moved to more than one location for a particular moment in time).

A-3.1 Waste Movement

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A-3.1.1 Incoming Shipments

Waste container shipments to the ICDF Complex are documented in IWTS via a Shipment Task. For each Shipment Task, the ICDF Complex user will identify a unique shipment number, the date and time of shipment, and each individual container on the shipment. The originator of a Shipment Task will execute the “send” portion of the task in IWTS. This triggers logic checks to determine if the Container Profile(s) and associated Material Profile(s) are approved and to determine if any established ICDF Complex limit will be violated.

Once the shipment is received at the ICDF Complex, the receiver will execute the “receive” portion of the task in IWTS. This triggers the same logic checks as executing the “send” portion and also updates the location of the container to the designated location at the ICDF Complex. A security scheme can be established so that only a user with ICDF rights can execute the “receive” portion of a Shipment Task to the ICDF Complex.

A-3.1.2 Outgoing Shipments

Waste container shipments from the ICDF Complex to off-Site locations are documented in IWTS via a Shipment Task. For each Shipment Task, an ICDF Complex user will identify a unique shipment number, the date and time of shipment, and each individual container on the shipment. The Complex user will execute the “send” portion of the task in IWTS. This triggers logic checks to determine if the Container Profile(s) and associated Material Profile(s) are approved and to determine if any established limit of the receiving facility will be violated. A security scheme can be established in IWTS so that only a user with ICDF Complex rights can execute the “send” portion of a Shipment Task from the ICDF Complex.

Once the shipment is received at the receiving facility, the receiver will execute the “receive” portion of the task in IWTS. This triggers the same logic checks as executing the “send” portion and also updates the location of the container to the designated location at the receiving facility.

A-3.1.3 Shipments within the ICDF Complex

Waste container shipments from and to locations with the ICDF Complex are documented in IWTS via a Shipment Task. For each Shipment Task, an ICDF Complex user will identify a unique shipment number, the date and time of shipment, and each individual container on

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the shipment. The Complex user will execute the “send” portion of the task in IWTS. This triggers logic checks to determine if any established limit of the receiving location within the ICDF Complex will be violated. A security scheme can be established in IWTS so that only a user with ICDF Complex rights can execute the “send” portion of a Shipment Task within the ICDF Complex.

NOTE: *Container Profiles and associated Material Profiles do not need to be approved for shipments within the ICDF Complex. This allows the flexibility to electronically move containers that may not be fully characterized from one ICDF Complex location to another.*

Once the shipment is received at the receiving location within the ICDF Complex, the receiver will execute the “receive” portion of the task in IWTS. This triggers the same logic checks as executing the “send” portion and also updates the location of the container to the designated receiving location within the ICDF Complex.

A-3.2 Waste Processing

A-3.2.1 Process Task

Waste container processing or treatment such as repackaging, sizing, and stabilization, are documented in IWTS via a Process Task. For each Process Task, an ICDF Complex user will identify a unique process number, the date and time of the process, each individual container being processed, and the receiving containers. The Complex user will execute the task in IWTS. This triggers logic checks to determine if any established limit of the receiving process location within the ICDF Complex will be violated. A security scheme can be established in IWTS so that only a user with ICDF Complex rights can execute a Process Task within the ICDF Complex.

A-3.2.2 Source Containers

An input or source container is a container actually being treated or processed. The execution of a Process Task in IWTS updates the status of a source container to “decommissioned.” This implies that the source container no longer physically exists in its original configuration, since it has been processed, and can no longer be assigned to another Shipment or Process Task. A container’s tracking history will end with a Process Task. Even though a container has been “decommissioned” via a Process Task, all original characterization information remains in IWTS and can be accessed at anytime.

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Page: A9 of A12**A-3.2.3 Receiving Containers**

An output or receiving container is a container that receives the output or end product of a process or treatment. An example would be two source containers being repackaged into a single container; the single container receiving the repackaged waste is the receiving container. The execution of a Process Task in IWTS will partition the radiological source term and EPA codes from the source container(s) into the receiving container(s), thereby aiding in characterization of the receiving container(s).

A-3.2.4 Container Genealogy

IWTS maintains a genealogical history for each container based on its role as a source or receiving container in a Process Task. In each Container Profile, a tree-view can be accessed that identifies each source container contributing to the makeup of a receiving container (or identifies each receiving container into which a source container was divided). The genealogy tree-view can span several generations and identifies the associated task and date that a container became an ancestor or descendant.

A-3.3 Waste Disposal**A-3.3.1 Disposal Task**

Waste container disposal is documented in IWTS via a Disposal Task. For each Disposal Task, an ICDF Complex user will identify a unique disposal number, the date and time of the disposal, each individual container being disposed of, and the disposal location. The Complex user will execute the task in IWTS. This triggers logic checks to determine if any established limit of the disposal location within the ICDF Complex will be violated. A security scheme can be established in IWTS so that only a user with ICDF Complex rights can execute a Disposal Task within the ICDF Complex.

A-3.3.2 Disposal Location

The ICDF Complex landfill will be modeled into three-dimensional grid coordinates in IWTS to correspond to the physical X/Y/Z axis of the landfill. Each Disposal Task in IWTS will identify the disposal grid coordinates for each container or load deposited. The execution of a Disposal Task in IWTS updates the location of the container to the designated grid location at the ICDF Complex landfill and updates the status of the disposed container to “decommissioned.”

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For disposed containers, “decommissioned” implies that the container has reached final disposition and can no longer be assigned to a Shipment Task. IWTS does allow for re-Disposal Tasks in the event that containers are relocated within the disposal location (i.e., moved from one grid location to another as in the case exhuming a previously disposed container). Re-Disposal Tasks are created, containers are assigned to the task, grid coordinates are specified and the tasks is executed moving the container from the original disposal location to the new coordinates.

In the unlikely event a container must be exhumed, a re-Disposal Task will be created and executed to accommodate and track waste (e.g., containers and contents) moved during the exhumation. The re-Disposal Task will include the precise location (e.g., grid X, Y, & Z coordinates) of any waste moved to facilitate the exhumation activity. The original Disposal Task for the exhumed container will be unexecuted thereby removing the container from the landfill inventory. The exhumed container will be transferred to an appropriate storage location, and a shipment task will be created and executed to document the physical movement.

A-3.3.3 Disposal Mapping

IWTS will provide the data source for geographical information system (GIS) mapping of the ICDF Complex landfill. The GIS map will provide a three-dimensional representation of the landfill and a listing of each container or load disposed of at a particular grid coordinate.

A-4. INVENTORY

A-4.1 Storage Inventory

IWTS provides an inventory history for all ICDF Complex storage locations based on container movement (date versus location). Since location inventory is based on container movement IWTS provides the ability to report both the current and past inventories for a location. A location’s inventory is reported by individual container, total container count, and total volume and weight.

The hand-held tools may be used to check IWTS reported inventory against the actual physical inventory of a location. IWTS documents these inventory checks and provides for documenting any inventory discrepancies and resolutions to the discrepancies.

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IWTS provides the same inventory history for disposal locations as it does for storage locations. The inventory report will provide the accumulated container count, volume, and weight disposed of for each grid location defined for the landfill.

A-5. LIMIT COMPLIANCE AND REPORTING**A-5.1 Limit Compliance**

TFR-2540 “Modifications to Integrated Waste Tracking System to Support ICDF Complex” delineates the limit compliance functionality being developed to support ICDF operation.

IWTS provides functionality to evaluate compliance with established operational limits, composite analysis limits, and WAC. Numerous compliance checks (physical, radiological, chemical and other, operational, etc.) have been built into the IWTS system. “Physical Inventory” checks include gross and net weight, gross and net volume, and container count. “Radiological Inventory” checks include fissile material, reportable quantities, less than DOE category III, and user defined nuclides. “Chemical and Other Inventory” checks include threshold quantities, threshold planning quantities, reportable quantities, flammable material, and user defined materials. “Operational Inventory” checks include LDRs, IDAPA, NESHAPS, screening level ecological risk assessment, groundwater contaminants of concern, and transuranic radionuclide concentration. Using limits defined and enabled at the Facility (e.g., ICDF Complex), unit (e.g., SSSTF receiving, SSSTF treatment, landfill, evaporation pond), and Grid-X (e.g., Landfill Grid A5L-1, etc.) designations, IWTS checks transactions (e.g., shipment tasks, disposal tasks, process tasks) for limit compliance. Constituents (e.g., radiological, chemical) and amounts (e.g., curies, grams) associated with a transaction are added to the existing inventory and compared to established limits. These limits may be daily, annual, or total depending on the media that is being considered. If the sum of the current inventory and transaction are less than the established limit, the transaction passes. If the sum of the current inventory and transaction are greater than the established limit, the transaction fails or a warning is provided depending on the limit definition. Limit compliance reports have been prepared for each of the limits identified above and are available for the various locations at the ICDF Complex. Limit evaluations are electronically stored with each task for historical reference and provide objective evidence of compliance.

IWTS also provides many reports to aid users in evaluating limits or WAC when automatic logic checks are not necessary or are very complicated to code into the software. Evaluations can also be performed from data retrieved from IWTS and evaluated in a separate application such as Microsoft Access.

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A-5.2 Reporting

TFR-2540 “Modifications to Integrated Waste Tracking System to Support ICDF Complex” delineates the reporting functionality being developed to support ICDF operation.

IWTS provides the data source for development of regulatory, management, and waste operations reports. IWTS houses many standardized reports, especially operations reports, that can be accessed directly in the software. These reports typically deal with day-to-day operations information such as inventories and process and disposal activity for a particular location.

Reports can also be compiled from data retrieved from IWTS and then generated in a separate application such as Microsoft Access. This provides flexibility to develop specialized reports outside of the IWTS software. These reports typically are regulatory-driven or management-level reports. The IWTS data can also be retrieved to support web-based reporting activities.

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Appendix B
IWTS Material Profile Example

**WASTE TRACKING PLAN FOR THE INEEL CERCLA
DISPOSAL FACILITY COMPLEX**Identifier: PLN-914
Revision: 0
Page: B2 of B14**Integrated Waste Tracking System
Material and Waste Characterization Profile
INFORMATION ONLY**2855N.R2 : WAG 5: Grouted Piping, 1000 gal. tank, misc. tools and equipment, and
PPE from removal of tank 729 at site ARA-16**General Information**

1. ☐ Yes ☒ No Will material and waste characterization be fully capable of complying with applicable Waste Acceptance Criteria?
If "No", receiving organization approval and completion of the following is required

- a. Waste Acceptance Criteria requirement(s) not met (list each): ICDF WAC is not part of RRWAC, waste does meet ICDF WAC per Jim Bruce approval
b. Receiving organization approval letter number for nonstandard material or waste: Jim Bruce must approve ship task

Contact	Name	E-Mail ID	Phone	Pager	Mail Stop
2. Generator Contact	Steve Wilkinson	wilks@inel.gov	(303) 526-5900	9481	3950
3. Technical Contact	Anne Lundahl	Lundahl@AL	(303) 526-5900	4865	5117

Charge Number: 3XBC31302

4. Material or waste type and action MLLW: CERCLA Generated to be Dispositioned at ICDF
5. Profile Name: WAG 5: Grouted Piping, 1000 gal. tank, misc. tools and equipment, and PPE from removal of tank 729 at site ARA-16
6. Waste Generated From: Is this secondary Cleanup/Stab. waste? ☐ Routine Operations ☒ Cleanup/Stabilization Activities Yes ☐ No ☐ Generating Status: ☒ One time only ☐ On-going
7. Generating process description: The ARA-16 Tank 729 is a 1000 gal. s.s. underground tank and associated piping w/in a lidless concrete containment tent. From 1959-1988, the tank received radioactive liquid waste, including ARA-1 hot cells, methanol, acetone, chlorinated paraffin, mixed acids from materials used in research and metal-etching processes, and other spent solvents. The clean-up of this site is being addressed under CERCLA, as mandated in the "Record of Decision, Power Burst Facility and Auxiliary Reactor Area Operable Unit 5-12," DOE/ID-10700, Jan. 2000. The sludge and water inside the tank was removed and treated. These streams are addressed in material profiles 2854N and 2853N, respectively. The waste profile consists of the s.s. tank, s.s. piping/valves, misc. tools/equipment, HEPA filters, containment tent, plastic, camera, camera spool, and PPE. The waste is considered debris under RCRA and was treated via an alternate treatment method for debris - macroencapsulation to meet the WAC for the SSA @ INTEL pending disposal @ the ICDF. The sludge in the tank contains PCBs up to 98 ppm, and is TSCA-regulated. Because the tank and pipe were drained and dried, they no longer are considered PCB articles; therefore are no longer regulated under TSCA. The tank, piping, and other debris was macroencapsulated and will be disposed of at the ICDF, a subtitle C and TSCA compliant landfill; the waste meets the performance standard for macroencapsulation; and, therefore, meets the applicable LDR requirements. The ARA-16 Tank 729 Radionuclide source-term calculations/assumptions for the tank, piping, and associated debris generated during D&D activities are presented in EDF-2003, "WAG 5, OU5-12, ARA-16 Radionuclide Tank Remedial Action Waste - Radiological Source Term Calculations."
8. Physical state at 70 degrees F (solid, liquid, sludge, gel, etc.): solid
9. ☐ Yes ☒ No Does the material contain free liquids?
10. ☒ Yes ☐ No Current waste minimization plan? (INEEL Generators Only)
Reference: INEEL P2 Plan, DOE/ID-10333
11. Indicate all that apply:

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- ☒ CERCLA ☐ Nonfriable asbestos ☐ Compressed gas cylinders ☐ Wastewater ☐ Debris - 435.1
☐ Scrap Metal ☐ FIFRA ☐ Friable asbestos ☐ Classified material ☐ Debris - Non RCRA/435.1
☐ OSHA carcinogen ☐ Unused material ☐ Soil ☐ Accountable nuclear material ☐ RR Nonradioactive Metals
☐ PCB >= 50 ppm ☐ Used oil ☒ Debris - RCRA ☐ > 100 PPM VOCs ☐ IW Conditional INEEL Landfil
☐ Etiologic Agent ☐ Aerosol cans ☐ Spill cleanup ☐ Universal Waste ☐ IW Nonconditional INEEL Lar
IW Off-site Disposal

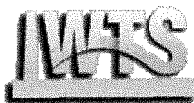
12. ☒ Yes ☐ No Is this DOT regulated hazardous material? If yes, identify DOT primary hazard class and DOT subsidiary hazard class(es).
13. ☒ Yes ☐ No At the point of generation did this material contain RCRA "F", "P", or "T" listed waste either in pure form, as a mixture, or as a treatment residual (i.e., ash, leachate, spill clean-up residue)? If yes, give applicable EPA Source Code: G44. Remediation of Past Contamination: State permit violation, state or federal law violation, or other. Form Code: W002. Mixed Media/Debris/Devices: Contaminated debris, scrap metal, wood, empty containers, glass/piping/other: and EPA Hazardous Waste Number: 40 CFR 261.10. If yes, provide the waste number and attach applicable LDR notification and documentation (40 CFR 268.10). If no, provide the waste number and attach applicable LDR notification and documentation (40 CFR 268.10).
14. RCRA hazardous waste determination was made by: ☐ Waste analysis, ☐ Process knowledge and/or ☒ Both
15. ☐ Yes ☒ No Does this Material have a characteristic code?
16. ☐ Yes ☒ No Was an Underlying Hazardous Constituent (UHC) determination performed?
- 16a. ☐ Yes ☒ No If a UHC determination was performed, were any detected in concentrations exceeding the Universal Treatment Standard?
17. ☒ Yes ☐ No Is supporting documentation submitted? If yes, list:
WDDF, radiological and chemical analytical data, Record of Decision, RD/RA workplan (DOE/ID-10761, Rev. 0, June 2000), EDF-3002 Rad source term calculations, shipping documentation, specifications on grout and monolith construction
18. ☒ Yes ☐ No The following data, by parameter, has been provided along with analytical data (required for waste to be dispositioned at the ICDF): Mean, Standard Deviation, Confidence Level.
19. ☐ Yes ☐ No Is the material LDR Compliant?
20. ☒ Yes ☐ No Additional narrative: A determination to evaluate for the applicability of UHCs to this waste stream was performed. This waste is defined as debris and carries no characteristic codes; and will be treated in accordance with the alternative treatment standard and be treated via macroencapsulation (40CFR 268.45). Subsequently, identification/declaration of UHCs is not required for this waste stream.

Current Generation Estimates

Estimate Date	Start Year	Int. Yrs.	Volume		Mass		Data Entry By		Inactivated By	
			Quan.	Units	Quan.	Units	User ID	Date	User ID	Date
17-Apr-2002	2001	1	1100.00	FT3			LundahlA	17-Apr-2002		

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Integrated Waste Tracking System Material and Waste Characterization Profile INFORMATION ONLY

2855N.R2 : WAG 5: Grouted Piping, 1000 gal. tank, misc. tools and equipment, and
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Characteristics of Material

1. Physical Characteristics of Material

a. Layer characteristics:

Layer No.	Physical State at 70 degrees F	Range of Percentage of Total	Description (as required by GI)
1	solid	100 to 100 vol%	Variable

b. Density of material or waste (NA for hazardous waste and recyclable material)

Liquid: to g/ml Solid: to

c. ☐ Yes ☒ No Is this aqueous? If yes, give total solids range

to g/ml

d. ☐ Yes ☒ No Is this incinerable liquid? If yes, give viscosity range

to SSU

2. Chemical Characteristics of Material

a. Does the material contain any of the following? For each item, check Yes or No and include corresponding quantitative information in 2b

Yes No

- ☒ Free liquid - Organic base
- ☒ Free liquid - Aqueous base
- ☒ Absorbents
- ☒ Chelating agents
- ☒ Aqueous liquid with reactive sulfide ≥ 10 mg/L
- ☒ Aqueous liquid with reactive sulfide ≥ 10 mg/L
- ☒ Air reactives
- ☒ Water reactives
- ☒ Other reactives
- ☒ Fuming acids or acid gases
- ☒ Shock sensitive constituents
- ☒ Explosives
- ☒ Pyrophorics
- ☒ Petroleum products
- ☒ Oxidizers
- ☒ Benzene
- ☒ PCBs ≥ 25 ppm
- ☒ PCBs ≥ 5 ppm
- ☒ PCB liquids
- ☒ PCB capacitors/ballasts
- ☒ PCB transformers/regulators
- ☒ PCB liquid contaminated debris or derived from a spill of PCB liquid
- ☒ PCBs ≥ 50 ppm

For liquid waste only

- ☒ Halogenated organic compounds ≥ 1000 mg/L as listed in 40 CFR 268, Appendix III
- ☒ Nickel and/or its compounds (as Ni) ≥ 134 mg/L
- ☒ Thallium and/or its compounds (as Tl) ≥ 103 mg/L

For solid waste only

- ☒ Halogenated organic compounds ≥ 1000 mg/L as listed in 40 CFR 268, Appendix III

For used oil only

- ☒ Arsenic ≥ 5 ppm
- ☒ Cadmium ≥ 2 ppm
- ☒ Chromium ≥ 10 ppm
- ☒ Lead ≥ 100 ppm
- ☒ PCBs ≥ 2 ppm
- ☒ Total halogens $\geq 1,000$ ppm
- ☒ Total halogens $\geq 4,000$ ppm

Incinerable wastes only

- ☒ Bromine in any form
- ☒ Chlorine in any form
- ☒ Fluorine in any form
- ☒ Iodine in any form
- ☒ PCBs ≥ 2 ppm
- ☒ Sulfur in any form

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2. Chemical Characteristics of Material (continued)

b. Composition of material:

Related Characteristic (*Other* Where NA)	Name of Material or Chemical	Carcinogen	Composition Range		
			From	To	Units
Other	debris which came into contact with F-listed waste	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	0	100	vol%
Concrete	grout used to macroencapsulate debris	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	30	90	vol%
Filters, HEPA	hepa filter used in containment tent to filter air	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	1	5	vol%
Metal combinations or assemblies	pipe and valves and flanges	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	5	10	vol%
Paper and/or cloth	PPE	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	10	20	vol%
Plastic, Non-halogenated	containment plastic	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	10	20	vol%
Revise: Metal - Miscellaneous small objects	metal tools such as wrenches	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	10	15	vol%
Steel, Stainless	stainless steel piping and fittings	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	30	40	vol%

c. ☐ Yes ☒ No Is flash point applicable? If yes, state the following:

Flash point is: _____ Method used: _____

(Specify Other): _____

d. Information for incinerable waste only:

(1) Heat of combustion _____ to _____ BTU/lb (2) Ash content _____ to _____ wt%

(3) Total halogen content _____ to _____ ppm (4) Water content _____ to _____ wt%

(5) Suspended particulates content _____ to _____ ppm

Metal	Known or Expected?	Expected Composition Range	Representative Sample Analysis	Detection Limit	Units
Antimony (Sb)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	_____ to _____	_____ to _____	_____	_____
Arsenic (As)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	_____ to _____	_____ to _____	_____	_____
Barium (Ba)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	_____ to _____	_____ to _____	_____	_____
Beryllium (Be)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	_____ to _____	_____ to _____	_____	_____
Cadmium (Cd)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	_____ to _____	_____ to _____	_____	_____
Chromium (Cr)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	_____ to _____	_____ to _____	_____	_____
Cobalt (Co)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	_____ to _____	_____ to _____	_____	_____
Copper (Cu)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	_____ to _____	_____ to _____	_____	_____
Iron (Fe)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	_____ to _____	_____ to _____	_____	_____
Lead (Pb)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	_____ to _____	_____ to _____	_____	_____
Manganese (Mn)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	_____ to _____	_____ to _____	_____	_____
Mercury (Hg)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	_____ to _____	_____ to _____	_____	_____
Molybdenum (Mo)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	_____ to _____	_____ to _____	_____	_____
Nickel (Ni)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	_____ to _____	_____ to _____	_____	_____

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Metal	Known or Expected?		Expected Composition Range	Representative Sample Analysis	Detection Limit	Units
Potassium (K)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	_____ to _____	_____ to _____	_____	_____
Selenium (Se)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	_____ to _____	_____ to _____	_____	_____
Silver (Ag)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	_____ to _____	_____ to _____	_____	_____
Sodium (Na)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	_____ to _____	_____ to _____	_____	_____
Thallium (Tl)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	_____ to _____	_____ to _____	_____	_____
Vanadium (V)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	_____ to _____	_____ to _____	_____	_____
Zinc (Zn)	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	_____ to _____	_____ to _____	_____	_____

Example

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- e. ☒ Yes ☐ No Was a waste analysis performed (e.g., TCLP Data)?
☒ Yes ☐ No Were the sampling and analysis protocols used in full compliance with SW-846 protocol or other equivalent regulatory agency approved methods?
- f. RCRA Hazardous Constituents (Concentration Based D004-D043)

EPA Code	Hazardous Constituent	Exp.? (Y,N)	TCLP Values	Type	Waste Concentration Range			Representative Sample			Detect Limit	
					From	To	Units	From	To	Units	Limit	Units
Metals:												
D004	Arsenic	<input type="checkbox"/>	<input checked="" type="checkbox"/>		-							
D005	Barium	<input type="checkbox"/>	<input checked="" type="checkbox"/>		-							
D006	Cadmium	<input type="checkbox"/>	<input checked="" type="checkbox"/>		-							
D007	Chromium	<input type="checkbox"/>	<input checked="" type="checkbox"/>		-							
D008	Lead	<input type="checkbox"/>	<input checked="" type="checkbox"/>		-							
D009	Mercury	<input type="checkbox"/>	<input checked="" type="checkbox"/>		-							
D010	Selenium	<input type="checkbox"/>	<input checked="" type="checkbox"/>		-							
D011	Silver				-							
Volatiles:												
D018	Benzene				-			-				
D019	Carbon tetrachloride				-			-				
D021	Chlorobenzene	<input type="checkbox"/>	<input checked="" type="checkbox"/>		-			-				
D022	Chloroform	<input type="checkbox"/>	<input checked="" type="checkbox"/>		-			-				
D027	p-Dichlorobenzene (1,4-Dichlorobenzene)	<input type="checkbox"/>	<input checked="" type="checkbox"/>		-			-				
D028	1,2-Dichloroethane	<input type="checkbox"/>	<input checked="" type="checkbox"/>		-			-				
D029	1,1-Dichloroethylene	<input type="checkbox"/>	<input checked="" type="checkbox"/>		-			-				
D035	Methyl ethyl ketone	<input type="checkbox"/>	<input checked="" type="checkbox"/>		-			-				
D038	Pyridine	<input type="checkbox"/>	<input checked="" type="checkbox"/>		-			-				
D039	Tetrachloroethylene	<input type="checkbox"/>	<input checked="" type="checkbox"/>		-			-				
D040	Trichloroethylene	<input type="checkbox"/>	<input checked="" type="checkbox"/>		-			-				
D043	Vinyl chloride	<input type="checkbox"/>	<input checked="" type="checkbox"/>		-			-				
Semi-Volatiles:												
D023	o-Cresol	<input type="checkbox"/>	<input checked="" type="checkbox"/>		-			-				
D024	m-Cresol	<input type="checkbox"/>	<input checked="" type="checkbox"/>		-			-				
D025	p-Cresol	<input type="checkbox"/>	<input checked="" type="checkbox"/>		-			-				
D026	Cresol	<input type="checkbox"/>	<input checked="" type="checkbox"/>		-			-				
D030	2,4-Dinitrotoluene	<input type="checkbox"/>	<input checked="" type="checkbox"/>		-			-				
D032	Hexachlorobenzene	<input type="checkbox"/>	<input checked="" type="checkbox"/>		-			-				
D033	Hexachlorobutadiene	<input type="checkbox"/>	<input checked="" type="checkbox"/>		-			-				
D034	Hexachloroethane	<input type="checkbox"/>	<input checked="" type="checkbox"/>		-			-				

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EPA Code	Hazardous Constituent	Exp.? (Y,N)	TCLP Values	Type	Waste Concentration Range			Representative Sample			Detect Limit	
					From	To	Units	From	To	Units	Limit	Units
Semi-Volatiles:												
D036	Nitrobenzene	<input type="checkbox"/>	<input checked="" type="checkbox"/>		-			-				
D037	Pentachlorophenol	<input type="checkbox"/>	<input checked="" type="checkbox"/>		-			-				
D041	2,4,5-Trichlorophenol	<input type="checkbox"/>	<input checked="" type="checkbox"/>		-			-				
D042	2,4,6-Trichlorophenol	<input type="checkbox"/>	<input checked="" type="checkbox"/>		-			-				
Pesticides and Herbicides:												
D012	Endrin	<input type="checkbox"/>	<input checked="" type="checkbox"/>		-			-				
D012	Endrin, Endrin aldehyde	<input type="checkbox"/>	<input checked="" type="checkbox"/>		-			-				
D013	Lindane, alpha-BHC	<input type="checkbox"/>	<input checked="" type="checkbox"/>		-			-				
D013	Lindane, beta-BHC	<input type="checkbox"/>	<input checked="" type="checkbox"/>		-			-				
D013	Lindane, delta-BHC	<input type="checkbox"/>	<input checked="" type="checkbox"/>		-			-				
D013	Lindane, gamma-BHC (Lindane)	<input type="checkbox"/>	<input checked="" type="checkbox"/>		-			-				
D014	Methoxychlor	<input type="checkbox"/>	<input checked="" type="checkbox"/>		-			-				
D015	Toxaphene	<input type="checkbox"/>	<input checked="" type="checkbox"/>		-			-				
D016	2,4-D	<input type="checkbox"/>	<input checked="" type="checkbox"/>		-			-				
D017	2,4,5-TP (Silvex)	<input type="checkbox"/>	<input checked="" type="checkbox"/>		-			-				
D020	Chlordane	<input type="checkbox"/>	<input checked="" type="checkbox"/>		-			-				
D031	Heptachlor	<input type="checkbox"/>	<input checked="" type="checkbox"/>		-			-				
D031	Heptachlor epoxide	<input type="checkbox"/>	<input checked="" type="checkbox"/>		-			-				

Note: "Type" column designates type of analysis. (1=Approved Methods, 2=Process Knowledge, 3=Both)

g. RCRA Hazardous Constituents (Other)

EPA Code	Hazardous Constituent	TCLP Values	Type	Concentration Range			Representative Sample			Detect Limit	
				From	To	Units	From	To	Units	Limit	Units
F001A	Spent halogenated solvents used in degreasing; 1,1,1-Trichloroethane	No	2	0	-	220	mg/kg	-	-	mg/kg	
F001D	Spent halogenated solvents used in degreasing; Methylene chloride	No	2	-	-	ND	mg/kg	-	-	mg/kg	
F001F	Spent halogenated solvents used in degreasing; Trichloroethylene	No	2	0	-	45	mg/kg	-	-	mg/kg	
F005H	Spent non-halogenated solvents; Toluene	No	2	0	-	21	mg/kg	-	-	mg/kg	

Note: "Type" column designates type of analysis. (1=Approved Methods, 2=Process Knowledge, 3=Both)

h. Underlying Hazardous Constituents

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i. Analyte Data

Analyte	Flammable	TCLP Values	Type	Concentration Range			Representative Sample			Detect Limit	
				From	To	Units	From	To	Units	Limit	Units
Chromium; (TCLP)	No	Yes	1	-	-	-	-	0.0191	mg/L	Comment :	
Naphthalene	No	No	1	0	24.0	ppb	-	-	ppb		
Phenanthrene	No	No	1	0	26.0	ppb	-	-	ppb		
Di-n-butylphthalate	No	No	1	0	3000	ppb	-	-	ppb		
Bis (2-ethylhexyl) phthalate	No	No	1	0	18000	ppb	-	-	ppb		
Di-n-octylphthalate	No	No	1	0	300	ppb	-	-	ppb		
1,1-Dichloroethene	Yes	No	1	0	460	ppb	-	-	ppb		
1,1-Dichloroethane	Yes	No	1	0	83	ppb	-	-	ppb		
1,1,2-Trichloroethane	No	No	1	0	28	ppb	-	-	ppb		
Trichloroethylene	Yes	No	1	0	4	ppb	-	-	ppb		
Ethylbenzene	Yes	No	1	0	-	ppb	-	-	ppb		
Xylene	Yes	No	1	-	-	ppb	-	-	ppb		
Antimony	No	No	3	2	-	mg/kg	-	-			
Arsenic	No	No	3	3	-	mg/kg	-	-			
Barium	No	No	3	3	-	mg/kg	-	-			
Beryllium	No	No	3	6	6	mg/kg	-	-			
Cadmium	No	No	3	.0029	0.029	mg/kg	-	-			
Chromium	No	No	3	1.37	13.7	mg/kg	-	-			
Cobalt	No	No	3	0.018	0.18	mg/kg	-	-			
Copper	No	No	3	0.066	0.66	mg/kg	-	-			
Iron	No	No	3	47	470	mg/kg	-	-			
Lead	No	No	3	3.97	39.7	mg/kg	-	-			
Manganese	No	No	3	0.216	2.16	mg/kg	-	-			
Mercury	No	No	3	0.00335	.0335	mg/kg	-	-			
Nickel	No	No	3	0.41	4.07	mg/kg	-	-			
Potassium	Yes	No	3	0.23	2.28	mg/kg	-	-			
Selenium	No	No	3	5.27	52.7	mg/kg	-	-			
Silver	No	No	3	0.72	7.2	mg/kg	-	-			
Sodium	Yes	No	3	0.44	4.39	mg/kg	-	-			
Thallium	No	No	3	0.31	3.08	mg/kg	-	-			
Vanadium	No	No	3	0.16	1.60	mg/kg	-	-			
Zinc	No	No	3	0.89	8.90	mg/kg	-	-			
Barium; (TCLP)	No	Yes	1	-	-	-	-	0.1954	mg/L	Comment :	
Cadmium; (TCLP)	No	Yes	1	-	-	-	-	0.0207	mg/L	Comment :	

Note: "Type" column designates type of analysis. (1=Approved Methods, 2=Process Knowledge, 3=Both)

WASTE TRACKING PLAN FOR THE INEEL CERCLA DISPOSAL FACILITY COMPLEX

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Integrated Waste Tracking System Material and Waste Characterization Profile INFORMATION ONLY

2855N.R2 : WAG 5: Grouted Piping, 1000 gal. tank, misc. tools and equipment, and
PPE from removal of tank 729 at site ARA-16



3. Radiological Characteristics of Material:

a. ☐ Yes ☒ No Is fissile material present?

If yes, waste matrix group is: _____

b. Total transuranic activity per gram of waste is: ☒ ≤ 10 nCi/g (LLW) or
☐ > 10 nCi/g and ≤ 100 nCi/g (Alpha LLW) or
☐ > 100 nCi/g (TRU)

c. Isotope inventory:

Transuranic Isotope Inventory

Isotope	Activity Range	Fissionable Material Range	Representative Sample Analysis Activity	Fissionable Material
Am-241	3.000E-01 to 4.000E-01 nCi/g	_____ to _____ nCi/g	3.690E-01	_____
Pu-238	2.000E-01 to 3.000E-01 nCi/g	_____ to _____ nCi/g	2.550E-01	_____
Pu-239	2.000E-01 to 3.000E-01 nCi/g	_____ to _____ nCi/g	2.590E-01	_____
Pu-240	2.000E-01 to 3.000E-01 nCi/g	_____ to _____ nCi/g	2.450E-01	_____
Summation:	9.000E-01 to 1.000E+00 nCi/g	0.000E+00 to 0.000E+00 nCi/g		

Note: Sample Analysis Activity and Fissionable Material Units must correspond to Activity Range and Fissionable Material Range.

U233 and U235 Isotopes

Isotope	Activity Range	Fissionable Material Range	Representative Sample Analysis Activity	Fissionable Material
U-235	2.000E-03 to 3.000E-01 nCi/g	_____ to _____ nCi/g	2.450E-03	_____

Note: Sample Analysis Activity and Fissionable Material Units must correspond to Activity Range and Fissionable Material Range.

Other Isotopes

Isotope	Activity Range	Representative Sample Analysis Activity
Ag-108m	4.000E-02 to 6.000E-02 nCi/g	5.210E-02
Co-60	1.000E+00 to 2.000E+00 nCi/g	1.460E+00
Cs-134	1.000E-01 to 2.000E-01 nCi/g	1.110E-01
Cs-137	1.000E+02 to 2.000E+02 nCi/g	1.170E+02
Eu-152	1.000E-01 to 3.000E-01 nCi/g	2.030E-01
Eu-154	4.000E-02 to 6.000E-02 nCi/g	4.970E-02
Sr-90	5.000E+00 to 7.000E+00 nCi/g	5.800E+00
U-234	3.000E-01 to 5.000E+00 nCi/g	4.000E-01
U-238	4.000E-03 to 6.000E-03 nCi/g	5.230E-03
Y-90	5.480E+00 to 6.100E+00 nCi/g	5.800E+00
Zn-65	1.000E-03 to 2.000E-03 nCi/g	1.730E-03

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d. Expected radiation dose rate at surface: 0 to 300 mrem/hr
at 1-meter: 0 to 50 mrem/hr

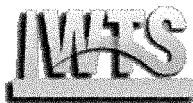
e. ☐ Yes ☒ No Is the waste greater than Class C as defined in 10 CFR 61.557?

f. Content Codes:

Comments	
Insert Info	Comments
lundahla 04/17/2002	Moved all containers of debris to this revision (2855N.R2). Had to create this revision to delete "scrap metal" from Spec. Char. screen. Rev. 1 was originally created in order to update analyte data for both rad and RCRA constituents.
lundahla 04/17/2002	Comment 1. A revision of 2855N was created in order to update the analyte data to that which would truly be expected on the debris waste contained in this waste stream. A revision was required in order to delete "scrap metal" from the spec. char. screen. This revision was created from the clean up and removal of a tank which had contained debris. A 1998 sample of the analyte data available for this waste was from the analysis of the sludge which was expected to be present in the debris. It is expected that the debris, PPE etc. which is contained within this waste stream will contain a maximum of 10 percent of the sludge as a contamination. The debris was grouted. The weight per volume of the debris waste is approximately 10 percent. Therefore, the expected weight of the debris waste is approximately 10 percent of the sludge. The debris waste is expected to be under the EPA Codes is 0.1 to 1 percent of the maximum concentration range used in the analysis of this sludge.
castleberryE 04/24/2002	Jim and Elizabeth approved this material per request of Anne Lundahl and Rhonda Rohe. Visual inspection performed and approved by Bruce signed off on the hold point.

WASTE TRACKING PLAN FOR THE INEEL CERCLA DISPOSAL FACILITY COMPLEX

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Integrated Waste Tracking System Material and Waste Characterization Profile INFORMATION ONLY

2855N.R2 : WAG 5: Grouted Piping, 1000 gal. tank, misc. tools and equipment, and
PPE from removal of tank 729 at site ARA-16



Supplemental Information

A. Containers Defined to Date:

Container ID	Container Date	Container Size/Type	Status	De-comm.	Common Name or Material
ARA000061	20-Jun-2001	41 - FT3	Active	<input type="checkbox"/>	WAG 5: Grouted Piping, 1000 gal. tank, misc. tools and equipment, and PPE from removal of tank 729 at site ARA-16
ARA000062	20-Jun-2001	41 - FT3	Active	<input type="checkbox"/>	WAG 5: Grouted Piping, 1000 gal. tank, misc. tools and equipment, and PPE from removal of tank 729 at site ARA-16
ARA000063	20-Jun-2001	41 - FT3	Active	<input type="checkbox"/>	WAG 5: Grouted Piping, 1000 gal. tank, misc. tools and equipment, and PPE from removal of tank 729 at site ARA-16
ARA000064	20-Jun-2001	41 - FT3	Active	<input type="checkbox"/>	WAG 5: Grouted Piping, 1000 gal. tank, misc. tools and equipment, and PPE from removal of tank 729 at site ARA-16
ARA000065	20-Jun-2001	41 - FT3	Active	<input type="checkbox"/>	WAG 5: Grouted Piping, 1000 gal. tank, misc. tools and equipment, and PPE from removal of tank 729 at site ARA-16
WAG010080	17-Sep-2001	41 - FT3	Active	<input type="checkbox"/>	WAG 5: Grouted Piping, 1000 gal. tank, misc. tools and equipment, and PPE from removal of tank 729 at site ARA-16
WAG010081	17-Sep-2001	41 - FT3	Active	<input type="checkbox"/>	WAG 5: Grouted Piping, 1000 gal. tank, misc. tools and equipment, and PPE from removal of tank 729 at site ARA-16
WAG010082	17-Sep-2001	41 - FT3	Active	<input type="checkbox"/>	WAG 5: Grouted Piping, 1000 gal. tank, misc. tools and equipment, and PPE from removal of tank 729 at site ARA-16
WAG010083	17-Sep-2001	41 - FT3	Active	<input type="checkbox"/>	WAG 5: Grouted Piping, 1000 gal. tank, misc. tools and equipment, and PPE from removal of tank 729 at site ARA-16
WAG010084	17-Sep-2001	41 - FT3	Active	<input type="checkbox"/>	WAG 5: Grouted Piping, 1000 gal. tank, misc. tools and equipment, and PPE from removal of tank 729 at site ARA-16
WAG010085	19-Sep-2001	41 - FT3	Active	<input type="checkbox"/>	WAG 5: Grouted Piping, 1000 gal. tank, misc. tools and equipment, and PPE from removal of tank 729 at site ARA-16
WAG010086	19-Sep-2001	41 - FT3	Active	<input type="checkbox"/>	WAG 5: Grouted Piping, 1000 gal. tank, misc. tools and equipment, and PPE from removal of tank 729 at site ARA-16
WAG010087	19-Sep-2001	41 - FT3	Active	<input type="checkbox"/>	WAG 5: Grouted Piping, 1000 gal. tank, misc. tools and equipment, and PPE from removal of tank 729 at site ARA-16
WAG010088	05-Sep-2001	14.9 - M3	Active	<input type="checkbox"/>	WAG 5: Grouted Piping, 1000 gal. tank, misc. tools and equipment, and PPE from removal of tank 729 at site ARA-16
WAG010263	14-Aug-2001	0 - FT3	Active	<input type="checkbox"/>	WAG 5: Grouted Piping, 1000 gal. tank, misc. tools and equipment, and PPE from removal of tank 729 at site ARA-16
WAG010265	17-Sep-2001	41 - FT3	Active	<input type="checkbox"/>	WAG 5: Grouted Piping, 1000 gal. tank, misc. tools and equipment, and PPE from removal of tank 729 at site ARA-16
WAG010332	25-Apr-2002	85 - GAL	Active	<input type="checkbox"/>	WAG 5: Grouted Piping, 1000 gal. tank, misc. tools and equipment, and PPE from removal of tank 729 at site ARA-16

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Integrated Waste Tracking System Material and Waste Characterization Profile INFORMATION ONLY

2855N.R2 : WAG 5: Grouted Piping, 1000 gal. tank, misc. tools and equipment, and
PPE from removal of tank 729 at site ARA-16



B. Profile Change History:

User Name	Date	Explanation
CastleberryE	24-Apr-2002 09:27 AM	BEGIN VALIDATION FOR MATERIAL PROFILE APPROVE
		CASTLEBERRY. WGS. Call Point-7. Authorized on Generating Unit (OU5-12).
		RAD DATA VALIDATION PASSED
		HAZ DATA VALIDATION SOURCE CODE/FORM CODE PASSED EPA CODES PASSED
		SITE TREATMENT PLAN VALIDATION PASSED
		COMPOSITION VALIDATION PASSED
		OVERALL VALIDATION PASSED
castleberryE	24-Apr-2002 09:28 AM	changing disposition to read Jim Bruce's approval instead of Mike Arndt's
CastleberryE	24-Apr-2002 09:20 AM	CASTLEBERRY. WGS. Call Point-4. Authorized on Generating Unit (OU5-12).
roher	23-Apr-2002 05:41 PM	to prepare for and technical contact and to Review profile
RoheR	23-Apr-2002 05:41 PM	BEGIN VALIDATION FOR MATERIAL PROFILE REVIEW
		ROHER. WGS. Call Point-6. Authorized on Generating Unit (OU5-12).
		RAD DATA VALIDATION PASSED
		HAZ DATA VALIDATION SOURCE CODE/FORM CODE PASSED EPA CODES PASSED
		SITE TREATMENT PLAN VALIDATION PASSED
		COMPOSITION VALIDATION PASSED
		OVERALL VALIDATION PASSED
RoheR	23-Apr-2002 05:40 PM	ROHER. WGS. Call Point-4. Authorized on Generating Unit (OU5-12).
lundahla	17-Apr-2002 02:37 PM	check question 7 under char. Req yes
LundahlA	17-Apr-2002 02:30 PM	LUNDAHLA. WGS. Call Point-4. Authorized on Generating Unit (OU5-12).
roher	08-Apr-2002 09:47 AM	to review profile
RoheR	08-Apr-2002 09:40 AM	ROHER. WGS. Call Point-4. Authorized on Generating Unit (OU5-12).

**WASTE TRACKING PLAN FOR THE INEEL CERCLA
DISPOSAL FACILITY COMPLEX**

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Integrated Waste Tracking System
Material and Waste Characterization Profile
INFORMATION ONLY

2855N.R2 : WAG 5: Grouted Piping, 1000 gal. tank, misc. tools and equipment, and
PPE from removal of tank 729 at site ARA-16



B. Profile Change History:

User Name	Date	Explanation
LundahlA	18-Feb-2002 12:28 PM	BEGIN VALIDATION FOR MATERIAL PROFILE CERTIFY
		LUNDAHLA, WGS. Call Point-5. Authorized on Generating Unit (OU5-12).
		RAD DATA VALIDATION PASSED
		HAZ DATA VALIDATION SOURCE CODE/FORM CODE PASSED EPA CODES PASSED
		SITE TREATMENT PLAN VALID PASSED
		COMPOSITION VAL PASSED
		OVER L... FIC... PA... E...
	End	Report

**WASTE TRACKING PLAN FOR THE INEEL CERCLA
DISPOSAL FACILITY COMPLEX**

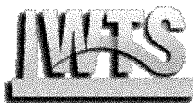
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Appendix C

IWTS Container Profile Example

**WASTE TRACKING PLAN FOR THE INEEL CERCLA
DISPOSAL FACILITY COMPLEX**Identifier: PLN-914
Revision: 0
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Container Profile
INFORMATION ONLY**

WAG010088 : WAG 5: Grouted Piping, 1000 gal. tank, misc. tools and equipment, and PPE from removal of tank 729 at site ARA-16

General and PCB Information

1. TID Seal No. (if applicable): n/a
2. Physical Form: Solid
3. Chemical Form or CAS No.: oxide
4. Container Vented?: ☐ Yes ☒ No Vent Type:
5. PCB Capacitors?: ☐ Yes ☒ No
- a. Number of Items in Package:
- b. Size of Capacitors: ☐ Large ☐ Small ☐ N/A
- c. Leaking?: ☐ Yes ☐ No
6. PCB Transformer or Regulators: ☐ Yes ☒ No
- a. Dimension:
- b. Name Plate Gallons:
- c. Weight (lbs)/item:
7. Out of Service Date:
8. Bulk Lead?: ☐ Yes ☒ No
- Bulk Lead Type:
9. Other: none
10. Other: none
11. Other: none
- Contents Physically Verified: ☐ Yes ☐ No

Verified by: Anne LundahlDate: 17-Oct-2001 12:54 PM

**WASTE TRACKING PLAN FOR THE INEEL CERCLA
DISPOSAL FACILITY COMPLEX**Identifier: PLN-914
Revision: 0
Page: C3 of C9**Integrated Waste Tracking System
Container Profile
INFORMATION ONLY**

WAG010088 : WAG 5: Grouted Piping, 1000 gal. tank, misc. tools and equipment, and PPE from removal of tank 729 at site ARA-16

Marks and Labels**1. Marks and Labels:**

- a. Generator Name ☒ Yes ☐ No
b. Generator Phone No. ☒ Yes ☐ No
c. Package Weight in Lbs. ☒ Yes ☐ No
d. Orientation Markings ☐ Yes ☒ No
e. Waste Characterization ID ☒ Yes ☐ No
f. EPA Marking ☒ Yes ☐ No
g. Proper DOT Markings ☒ Yes ☐ No
h. Other radiation label
i. Other CERCLA label

2. Additional Descriptions for Materials**3. Special Handling Instructions and Additional Information**Crane used to transfer box must be rated to lift at least 50,000 lbs.**4. List EPA Codes (All):** F001 005**5. List EPA Codes (Reportable):**

Composition of Material				
Related Chemical Characteristic (Use "Other" When Applicable)	Name of Material or Chemical	Carcinogen		Composition
		Yes	No	
Concrete	grout used to macroencapsulate debris	<input type="checkbox"/>	<input checked="" type="checkbox"/>	97.7 wt%
Steel, Stainless	stainless steel piping and tank	<input type="checkbox"/>	<input checked="" type="checkbox"/>	2.3 wt%

Hazardous Constituents

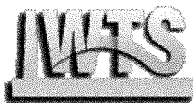
Unique ID	DOT RQ	EPA Haz. Waste No.	Amount	Waste Description and Treatment Subcategory
F001A	<input type="checkbox"/>	F001	220 mg/kg	Spent halogenated solvents used in degreasing : 1,1,1-Trichloroethane
F001D	<input type="checkbox"/>	F001	0 mg/kg	Spent halogenated solvents used in degreasing : Methylene chloride
F001F	<input type="checkbox"/>	F001	45 mg/kg	Spent halogenated solvents used in degreasing : Trichloroethylene
F005H	<input type="checkbox"/>	F005	21 mg/kg	Spent non-halogenated solvents : Toluene

DOT Shipping Description**DOT Description**

Radioactive material, LSA, n.o.s., 7, UN2912, Am-241 Pu-239 Pu-240 Pu-238 U-234 Cs-137, solid oxide 1.1E-03 TBq LSA II, Fissile excepted

WASTE TRACKING PLAN FOR THE INEEL CERCLA DISPOSAL FACILITY COMPLEX

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Integrated Waste Tracking System Container Profile INFORMATION ONLY

WAG010088 : WAG 5: Grouted Piping, 1000 gal. tank, misc. tools and equipment, and PPE from removal of tank 729 at site ARA-16

Radiological Characteristics

1. Waste Package:

- a. Radiation Dose Rate at Contact with Waste Package: = 80 mrem/hr
Radiation Dose Rate at One Meter from Waste Package: = 10 mrem/hr
b. Neutron Dose Rate at Contact from Waste Package: < 0.5 mrem/hr
Neutron Dose Rate at One Meter from Waste Package: < 0.5 mrem/hr

2. Are Dose rates for the Shipping Package different from the Waste Package? ☒

3. Shipping Package (i.e., shielded cask):

- a. Radiation Dose Rate at Contact with Waste Package:
Radiation Dose Rate at One Meter from Waste Package:
b. Neutron Dose Rate at Contact from Waste Package:
Neutron Dose Rate at One Meter from Waste Package:

Nuclides (All Identified)

Nuclides (95% Risk):

Total Activity (No Decay): 1.123E-03 TBq

Total Fissile: 1.05E-01 grams

Radionuclide Worksheet(s)

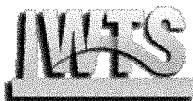
Source	Nuclide	Nuclide Reported	Total Amount	Non-AM Amount	Act. Metal Amount	Unit	DOT A2	Fissile (grams)
Generator Submission	Ag-108m		1.190E-05	1.190E-05		Ci	<input checked="" type="checkbox"/>	
	Am-241		8.430E-05	8.430E-05		Ci	<input checked="" type="checkbox"/>	2.456E-05
	Co-60		3.330E-04	3.330E-04		Ci	<input checked="" type="checkbox"/>	
	Cs-134		2.530E-05	2.530E-05		Ci	<input checked="" type="checkbox"/>	
	Cs-137		2.690E-02	2.690E-02		Ci	<input checked="" type="checkbox"/>	
	Eu-152		4.650E-05	4.650E-05		Ci	<input checked="" type="checkbox"/>	
	Eu-154		1.140E-05	1.140E-05		Ci	<input checked="" type="checkbox"/>	
	Pu-238		5.830E-05	5.830E-05		Ci	<input checked="" type="checkbox"/>	3.404E-06
	Pu-239		5.940E-05	5.940E-05		Ci	<input checked="" type="checkbox"/>	9.574E-04
	Pu-240		5.940E-05	5.940E-05		Ci	<input checked="" type="checkbox"/>	
	Sr-90		1.330E-03	1.330E-03		Ci	<input checked="" type="checkbox"/>	

WASTE TRACKING PLAN FOR THE INEEL CERCLA DISPOSAL FACILITY COMPLEX

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Integrated Waste Tracking System

Container Profile

INFORMATION ONLY

WAG010088 : WAG 5: Grouted Piping, 1000 gal. tank, misc. tools and equipment, and PPE from removal of tank 729 at site ARA-16

Radionuclide Worksheet(s)

Source	Nuclide	Nuclide Reported	Total Amount	Non-AM Amount	Act. Metal Amount	Unit	DOT A2	Fissile (grams)
Generator Submission	U-234		9.160E-05	9.160E-05		Ci	<input checked="" type="checkbox"/>	
	U-235		5.610E-07	5.610E-07		Ci	<input checked="" type="checkbox"/>	2.595E-01
	U-238		1.200E-06	1.200E-06		Ci	<input checked="" type="checkbox"/>	
	Y-90		1.330E-03	1.330E-03		Ci	<input checked="" type="checkbox"/>	
	Zn-65		3.970E-07	3.970E-07		Ci	<input checked="" type="checkbox"/>	

Task History

Task Date	INEEL Task ID	Task Status	Reject	Disposition
17-Dec-2001	SSA WAG5 #3	Exec		Storage
24-Apr-2002	SSA/WAG5	Exec		Storage

Comments

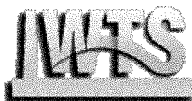
Insert Info	Comments
12/13/2001 lundahla	The Integrated Waste Characterization Profile states and certifies that this debris waste form was treated by an alternative method via macroencapsulation by use of a jacket of inert inorganic materials to "substantially reduce exposure to potential leaching media," as specified in 268.45 for hazardous debris. The performance and design/operating standard for this technology states that "encapsulated material must completely encapsulate debris and be resistant to degradation by the debris and its contaminants and materials into which it may come into contact after placement (leachate, other waste, microbes)." Therefore, this waste stream meets the performance standard for macroencapsulation, and meets the applicable LDR requirements.
12/13/2001 lundahla	The concrete mix used to macroencapsulate the tank was selected because of the slump and ability of the mix to flow and fill voids. An estimate of void space within the monolith is based upon the amount of concrete used. A total of 13 yards of concrete was ordered based upon the volume of the form. All but one-half yard was used. The actual volume within the wooden form is calculated to be 13.25 yd ³ . Based on the volume of the wooden form, a void space of less than 4% can be calculated. However, the concrete volume order was based upon the form volume and did not take into account the presence of the tank, rebar, etc. Taking these into account, the actual void volume would be much lower. The volume occupied by the tank itself, if compacted into a square with no voids, is 3.86 cubic feet or 0.14 cubic yards. Prior to the introduction of concrete into the form, the tank openings (i.e., manhole and access port) were opened to allow flow of concrete into the tank. An alternative approach to calculating void volume would be to estimate the corners and crevices within the tank where concrete may not be able to flow because of air resistance. Only the upper end corners of the tank would present a problem. A rough estimate of the volume within these corners based upon photographic evidence is less than 4 cubic feet. The tank had been crushed to approximately one-half its original volume of 1,000 gal, or approximately 66 cubic feet. A cubic yard (27 cubic feet) of concrete had previously been added to the tank, thus reducing this "empty" volume to 39 cubic feet. As evidenced by the concrete used, this remaining 39 cubic feet of void space was clearly filled during the grouting activity.
12/14/2001 lundahla	The following information is provided for ICDF waste acceptance: calculation for total grams estimated in the sludge residue per VOC constituent. Assumptions: 5% of tank inner surface area still showed visible signs of sludge residue (same assumption used for calculating rad source term); 1/16" thickness of sludge residue assumed over surface area (believed conservative); sludge density of 1.21 g/ml (information provided by analysis of the sludge). Subsequently calculated the following total grams per VOC constituent: 1,1,1-Trichloroethane = .003 grams; Methelene Chloride = 0 grams; Trichloroethylene = 6.8e-6 grams; Toluene 3.15e-6 grams. See file for calculations.

WASTE TRACKING PLAN FOR THE INEEL CERCLA DISPOSAL FACILITY COMPLEX

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Integrated Waste Tracking System

Container Profile

INFORMATION ONLY

WAG010088 : WAG 5: Grouted Piping, 1000 gal. tank, misc. tools and equipment, and PPE from removal of tank 729 at site ARA-16

Comments

Insert Info	Comments
12/14/2001 lundahla	Actual wooden form plywood frame dimensions: O.D. = 12.8' L x 4.7' H x 6' W, 3/4" thick plywood. Outer dimensions including 2' x 6' joints: 13.7' L x 5.5' H x 7' W. See file for specs and diagrams.
10/23/2001 lundahla	The ARA-16 Tank 729 radionuclide source term estimation was based on activity calculated/estimated for the tank piping system. First, the inside surface areas were calculated for the tank and piping. The tank to pipe surface area ratio was then multiplied by the total pipe activity (by nuclide) to obtain estimated tank activity. This was then multiplied by 0.05 based on visual examination of the inner surfaces of the tank prior to demolition. Visual examination showed that approximately 5% or less, of the inside surface of the tank was covered by residual sludge; as a conservative measure, a value of 5% was assumed. Pipe surface area = 419.2 ft ² and tank surface area = 176 ft ² . Inner surface area ratio (tank/piping) = .42. Final waste form weight = 48,700 lbs. See file for spreadsheet calculations. The calculations were prepared by John R. Giles; reviewed by Chris Greer, Mechanical Engineer.
10/31/2001 lundahla	Total nCi/g for the radionuclide tank waste form is 1.31e+06 R/S. See file for calculations. This falls within the range of activity established in the material profile 2855N.R1.
12/13/2001 lundahla	
10/17/2001 lundahla	Contents of this 13.7' L x 5.5' H x 7' W wooden box is the stainless steel tank (Tank 729) encapsulated in concrete. This material was removed from ARA-16 during D&D activities. The tank was crushed, placed in a box, and the box was filled with concrete grout as specified in SPC-1492 (see file). This debris was totally encapsulated in grout to meet the waste acceptance criteria for the INEEL CERCLA Disposal Facility (ICDF). The waste form is stored in the SSA at INTEC pending disposition to the ICDF. NET volume/weight is just over 50,000 lbs. Complete waste form, including the grout. The gross weight of waste form monolith is just over 50,000 lbs.; tank weight = 1,700 lbs; concrete weight = 47,000 lbs; box TARE weight = 1,000 lbs.

Quality Record Log

Screen	Column	Trans. Type	Before Change	After Change	Reason For Change	Insert
Define	Parent Material Profile	Update	2855N.R1	2855N.R2	move container to 2855n.r2	LundahlA 02/15/2002

Edit Log

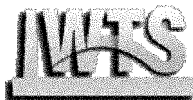
User Name	Date/Time	Explanation
RiceR	09-Apr-2002 09:51:50 AM	BEGIN VALIDATION FOR CONTAINER PROFILE APPROVE RICER. WGS. Call Point-7. Authorized on Gen. Unit (OU5-12). Authorized on Current Location (OU5-12). MATERIAL PROFILE vs. CONTAINER WARNING: NUCLIDES PASSED MATERIAL PROFILE vs. CONTAINER WARNING: EPA CODES PASSED MATERIAL PROFILE vs. CONTAINER WARNING: UHCs PASSED RAD DATA VALIDATION PASSED PHYSICAL DATA CHECKS PASSED OVERALL VALIDATION PASSED

WASTE TRACKING PLAN FOR THE INEEL CERCLA DISPOSAL FACILITY COMPLEX

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Integrated Waste Tracking System

Container Profile

INFORMATION ONLY

WAG010088 : WAG 5: Grouted Piping, 1000 gal. tank, misc. tools and equipment, and PPE from removal of tank 729 at site ARA-16

Edit Log

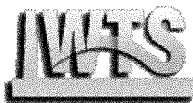
User Name	Date/Time	Explanation
RiceR	09-Apr-2002 09:51:50 AM	RICER. WGS. Call Point-7. Authorized on Gen. Unit (OU5-12). Authorized on Current Location (OU5-12).
RoheR	08-Apr-2002 05:33:52 PM	BEGIN VALIDATION FOR CONTAINER PROFILE REVIEW ROHER. WGS. Call Point-6. Authorized on Gen. Unit (OU5-12). Authorized on Current Location (OU5-12). MATERIAL PROFILE vs. CONTAINER WARNING: NUCLIDES PASSED MATERIAL PROFILE vs. CONTAINER WARNING: EPA CODES PASSED MATERIAL PROFILE vs. CONTAINER WARNING: UHCs PASSED RAD DATA VALIDATION PASSED PHYSICAL DATA CHECKS PASSED OVERALL VALIDATION PASSED
RoheR	08-Apr-2002 05:32 PM	ROHER. WGS. Call Point-6. Authorized on Gen. Unit (OU5-12). Authorized on Current Location (OU5-12).
LundahlA	05-Apr-2002 12:25:03 PM	BEGIN VALIDATION FOR CONTAINER PROFILE CERTIFY LUNDAHLA. WGS. Call Point-5. Authorized on Gen. Unit (OU5-12). Authorized on Current Location (OU5-12). MATERIAL PROFILE vs. CONTAINER WARNING: NUCLIDES PASSED MATERIAL PROFILE vs. CONTAINER WARNING: EPA CODES PASSED MATERIAL PROFILE vs. CONTAINER WARNING: UHCs PASSED RAD DATA VALIDATION PASSED PHYSICAL DATA CHECKS PASSED OVERALL VALIDATION PASSED
LundahlA	05-Apr-2002 12:25:03 PM	LUNDAHLA. WGS. Call Point-5. Authorized on Gen. Unit (OU5-12). Authorized on Current Location (OU5-12).
lundahla	15-Feb-2002 02:58:56 PM	move container to 2855n.r2
LundahlA	15-Feb-2002 02:54:28 PM	LUNDAHLA. WGS. Call Point-4. Authorized on Gen. Unit (OU5-12). Authorized on Current Location (OU5-12).

WASTE TRACKING PLAN FOR THE INEEL CERCLA DISPOSAL FACILITY COMPLEX

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Integrated Waste Tracking System

Container Profile

INFORMATION ONLY

WAG010088 : WAG 5: Grouted Piping, 1000 gal. tank, misc. tools and equipment, and PPE from removal of tank 729 at site ARA-16

Edit Log

User Name	Date/Time	Explanation
LundahlA	15-Feb-2002 02:54:16 PM	LUNDAHLA. WGS. Call Point-7. Authorized on Gen. Unit (OU5-12). Authorized on Current Location (OU5-12).
lundahla	14-Dec-2001 11:01:05 AM	add comment defining monolith box frame dimensions
LundahlA	14-Dec-2001 10:59:26 AM	LUNDAHLA. WGS. Call Point-4. Authorized on Gen. Unit (OU5-12). Authorized on Current Location (OU5-12).
lundahla	14-Dec-2001 08:58:19 AM	add comment regarding VOC grams
LundahlA	14-Dec-2001 08:56:36 AM	LUNDAHLA. WGS. Call Point-4. Authorized on Gen. Unit (OU5-12). Authorized on Current Location (OU5-12).
lundahla	13-Dec-2001 09:17:35 AM	Add comment regarding immutability
LundahlA	13-Dec-2001 09:16:07 AM	LUNDAHLA. WGS. Call Point-4. Authorized on Gen. Unit (OU5-12). Authorized on Current Location (OU5-12).
RiceR	07-Nov-2001 12:20:32 PM	<p>RICER. WGS. Call Point-7. Authorized on Gen. Unit (OU5-12). Authorized on Current Location (OU5-12).</p> <p>TRAFFIC. Call Point-8. Authorized on Gen. Unit (OU5-12). Authorized on Current Location (OU5-12).</p> <p>OVERALL PROFILE vs. CONTAINER WARNING: NUCLIDES PASSED</p> <p>MATERIAL PROFILE vs. CONTAINER WARNING: EPA CODES PASSED</p> <p>MATERIAL PROFILE vs. CONTAINER WARNING: UHCs PASSED</p> <p>RAD DATA VALIDATION PASSED</p> <p>PHYSICAL DATA CHECKS PASSED</p> <p>OVERALL VALIDATION PASSED</p>
RiceR	07-Nov-2001 12:20:32 PM	RICER. WGS. Call Point-7. Authorized on Gen. Unit (OU5-12). Authorized on Current Location (OU5-12).
KeatingS	07-Nov-2001 11:20:52 AM	KEATINGS. TRAFFIC. Call Point-8. Authorized on Gen. Unit (OU5-12). Authorized on Current Location (OU5-12).
keatings	07-Nov-2001 11:19:30 AM	provide psn
KeatingS	07-Nov-2001 11:18:55 AM	KEATINGS. TRAFFIC. Call Point-4. Authorized on Gen. Unit (OU5-12). Authorized on Current Location (OU5-12).

WASTE TRACKING PLAN FOR THE INEEL CERCLA DISPOSAL FACILITY COMPLEX

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Integrated Waste Tracking System Container Profile INFORMATION ONLY

WAG010088 : WAG 5: Grouted Piping, 1000 gal. tank, misc. tools and equipment, and PPE from removal of tank 729 at site ARA-16

Edit Log

User Name	Date/Time	Explanation
MartinsonB	05-Nov-2001 12:06:29 PM	BEGIN VALIDATION FOR CONTAINER PROFILE REVIEW MARTINSONB. WGS. Call Point-6. Authorized on Gen. Unit (OU5-12). Authorized on Current Location (OU5-12). MATERIAL PROFILE vs. CONTAINER WARNING: NUCLIDES PASSED MATERIAL PROFILE vs. CONTAINER WARNING: EPA CODES PASSED MATERIAL PROFILE vs. CONTAINER WARNING: UHCs PASSED RAD DATA VALIDATION PASSED PHYSICAL DATA CHECKS PASSED OVERALL VALIDATION PASSED
MartinsonB	05-Nov-2001 12:29 PM	MARTINSONB. WGS. Call Point-6. Authorized on Gen. Unit (OU5-12). Authorized on Current Location (OU5-12).
lundahlA	31-Oct-2001 02:53 PM	comment addressing total nCi/g for this container
LundahlA	31-Oct-2001 02:53 PM	LUNDAHLA. WGS. Call Point-4. Authorized on Gen. Unit (OU5-12). Authorized on Current Location (OU5-12).
lundahlA	31-Oct-2001 02:50:20 PM	correct nuclide value for Y90 and add comment regarding total nCi/g for this container
LundahlA	31-Oct-2001 02:48:51 PM	LUNDAHLA. WGS. Call Point-4. Authorized on Gen. Unit (OU5-12). Authorized on Current Location (OU5-12).
LundahlA	23-Oct-2001 12:26:54 PM	BEGIN VALIDATION FOR CONTAINER PROFILE CERTIFY LUNDAHLA. WGS. Call Point-5. Authorized on Gen. Unit (OU5-12). Authorized on Current Location (OU5-12). MATERIAL PROFILE vs. CONTAINER WARNING: NUCLIDES PASSED MATERIAL PROFILE vs. CONTAINER WARNING: EPA CODES PASSED MATERIAL PROFILE vs. CONTAINER WARNING: UHCs PASSED RAD DATA VALIDATION PASSED PHYSICAL DATA CHECKS PASSED OVERALL VALIDATION PASSED
LundahlA	23-Oct-2001 12:26:54 PM	LUNDAHLA. WGS. Call Point-5. Authorized on Gen. Unit (OU5-12). Authorized on Current Location (OU5-12).

**WASTE TRACKING PLAN FOR THE INEEL CERCLA
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Appendix D

IWTS Shipment Task Example

WASTE TRACKING PLAN FOR THE INEEL CERCLA DISPOSAL FACILITY COMPLEX

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SSA WAG 5 #1
ARA-16 piping to SSA

ICDF Staging and Storage Annex



Information Only

Task Definition						
Originating Facility WAG 5 : OU5-12 Idaho National Engineering and Environmental Laboratory Waste Area Group 5 - PBF/AR A WAG 5 Operable Unit 5-12 Idaho Falls, ID <input type="checkbox"/> System Controlled as of:	Destination Unit WAG 3 : S Idaho National Engineering and Environmental Laboratory Waste Area Group 3 - C ICDF Staging and Storage Annex Idaho Falls, ID System Controlled as of: 01-Jun-2000 12:00 AM					
Shipment 24-Jul-2001 12:05:00 PM						
Load or Campaign ID: Charge No : 3xhc31302						
<input checked="" type="checkbox"/> Name: Ronde Rohe Phone: (208) 526-1048 FAX: (208) 526-8633 E-Mail: RHERD@INEL.GOV	<input checked="" type="checkbox"/> Name: James Bruce Phone: (208) 526-4370 FAX: (208) 526-9473 E-Mail: EJJ@INEL.GOV					
Status						
<u>Record Status</u> <input checked="" type="checkbox"/> Active <input type="checkbox"/> Pending <input type="checkbox"/> Cancelled	<u>Record Status</u> <input checked="" type="checkbox"/> Locked (user and date): roher 23-Jul-2001 <input type="checkbox"/> Unlocked <u>Record Status</u> User: RoheR Date: 23-Jul-2001 08:53:24 AM					
Containers						
Barcode	Unit From	Approved Mat. Profile	Approved Container	Reject	Container	Common Name of Material
ARA000061	OU5-12	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	41-FT3 CM	WAG 5: Grouted Piping, 1000 gal. tank, misc. tools and equipment, and PPE from removal of tank 729 at site ARA-16
ARA000062	OU5-12	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	41-FT3 CM	WAG 5: Grouted Piping, 1000 gal. tank, misc. tools and equipment, and PPE from removal of tank 729 at site ARA-16
ARA000064	OU5-12	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	41-FT3 CM	WAG 5: Grouted Piping, 1000 gal. tank, misc. tools and equipment, and PPE from removal of tank 729 at site ARA-16
ARA000065	OU5-12	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	41-FT3 CM	WAG 5: Grouted Piping, 1000 gal. tank, misc. tools and equipment, and PPE from removal of tank 729 at site ARA-16

**WASTE TRACKING PLAN FOR THE INEEL CERCLA
DISPOSAL FACILITY COMPLEX**Identifier: PLN-914
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Page: D3 of D4SSA WAG 5 #1
ARA-16 piping to SSA

ICDF Staging and Storage Annex



Information Only

Grid Locations

Previous	Previous Grid Location	New Grid Location
	X	

General Information (If Applicable)

Shipment is : ☐ Bulk ☒ Container
Are containers palletized?: ☐ Yes ☒ No
If yes, give number of pallets: _____
Special handling requirements: ☐ Yes ☒ No
If yes, summarize handling instructions being used to receiving organization: _____

Review, and Approval (If Applicable)

☒ Yes ☐ No roher
Signature _____

Certification

Shipment Certifier: ☒ roher
Signature Date: 23-Jul-2001

Name: Rhonda Rohe
Phone: (208) 526-1048
FAX: (208) 526-8632
E-Mail: ROHERD
Pager: 9171

List Approving Organization: wgs/wag 3

Approvals

WGS A pproval: ☒ roher
Signature Date: 23-Jul-2001

Name: Rhonda Rohe
Phone: (208) 526-1048
FAX: (208) 526-8632
E-Mail: ROHERD
Pager: 9171

**WASTE TRACKING PLAN FOR THE INEEL CERCLA
DISPOSAL FACILITY COMPLEX**Identifier: PLN-914
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ARA-16 piping to SSA

ICDF Staging and Storage Annex



Information Only

Packaging and Traffic Approval: ☒ keatings
Signature Date: 23-Jul-2001Name: Steve Keating
Phone: (208) 526-0132
FAX: (208) 536-7363
E-Mail: SJK
Pager: 55Receiving Facility Approval: ☒ castleberrye
Signature Date: 23-Jul-2001Name: Jim Bruce
Phone: (208) 526-0132
FAX: (208) 536-7363
E-Mail: JMB
Pager: 73

Insert Info	Comments
roher 07/23/2001	first shipment of WAG 5 to SSA. Task must be approved by Jim Bruce or his representative before being shipped SCO.
roher 07/23/2001	is waste stream debris has been generated by macroencapsulation to meet LDRs.

User Name	Date/Time	Explanation
castleberrye	24-Jul-2001 03:02 PM	Time and date shipment received is being added for Jim Bruce.
CastleberryE	24-Jul-2001 03:02:17 PM	BEGIN TASK EVALUATION, REQUESTED BY CASTLEBERRY, AT 2001-07-24 15:02:16.883000 CASTLEBERRY, WGS, Call Point-6. Authorized on Originating Location (WAG 5). Authorized on Destination Location (SSA). Overall Authorization Passed. AUTHORIZATION SCHEME: PASSED REQUIRED APPROVALS/SIGNATURES: PASSED EXECUTION STATE: FULL EXECUTE (189) APPROVED MATERIAL PROFILE CHECK: PASSED CONTAINER PROFILE VERIFICATION AND STATUS CHECK: PASSED ANNUAL MATERIAL PROFILE REVIEW CHECK: PASSED TIME AND LOCATION INTEGRITY CHECK: PASSED, C= 4 CHECK INBOUND FOR STOLEN RECEIVING CONTAINERS: PASSED SUMMARY RESULT: **** PASSED ****
CastleberryE	24-Jul-2001 03:02:16 PM	CASTLEBERRY, WGS, Call Point-6. Authorized on Originating Location (WAG 5). Authorized on Destination Location (SSA). Overall Authorization Passed.
CastleberryE	24-Jul-2001 02:43:27 PM	CASTLEBERRY, WGS, Call Point-7. Authorized on Originating Location (WAG 5). Authorized on Destination Location (SSA). Overall Authorization Passed.
castleberrye	23-Jul-2001 01:23:43 PM	Jim Bruce is approving a shipment transfer per Elita Castleberry